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ABSTRACT

As one in a series of test item collections developed by the Assessment and Evaluation Unit of the Directorate of Studies, items of value from past tests are made available to teachers for the construction of unit tests, term examinations or as a basis for class discussion. Each collection was reviewed for content validity and reliability. The test items meet syllabus content and aims best suited to multiple choice questions, but teachers are meant to base the use of the test items on student ability and the particular program objectives. Minerals and energy resources and demand in Australia and the world are presented in volume six of the geography test items. Mineral exports, mining, and the aluminum/bauxite, coal and iron ore industries are covered. Test items are also concerned with oil, gas and uranium supplies. Answer keys are provided with test construction guidelines. Tables, maps and diagrams illustrate many items. (CM)

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GEOGRAPHY

LIBRARY OF TEST ITEMS

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TM 820 295

VOLUME SIX

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February 1980

GEOGRAPHY

LIBRARY OF TEST ITEMS

VOLUME SIX

This volume of test items has been designed by the School Certificate Development Unit to provide stimulus materials and test items for Geographical teaching units based on the theme of Energy and Minerals. It therefore provides materials and test items which complement the curriculum unit model "The Energy Problem", which has been developed by the Directorate of Studies. This curriculum unit will appear in schools later this year as Newsletter S.G. 15.

ACKNOWLEDGEMENTS

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Acknowledgement is also due to Mrs. C. Burke who was involved in the initial development work of this project.

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GEOGRAPHY

LIBRARY OF TEST ITEMS

		TOPIC CODE
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-	General Features of Natural Landscapes	A
-	Equatorial and Tropical Rainforests	B
-	Hot Dry Deserts	C
-	Tropical Savannas	D
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-	Mediterranean Rural Landscape	K
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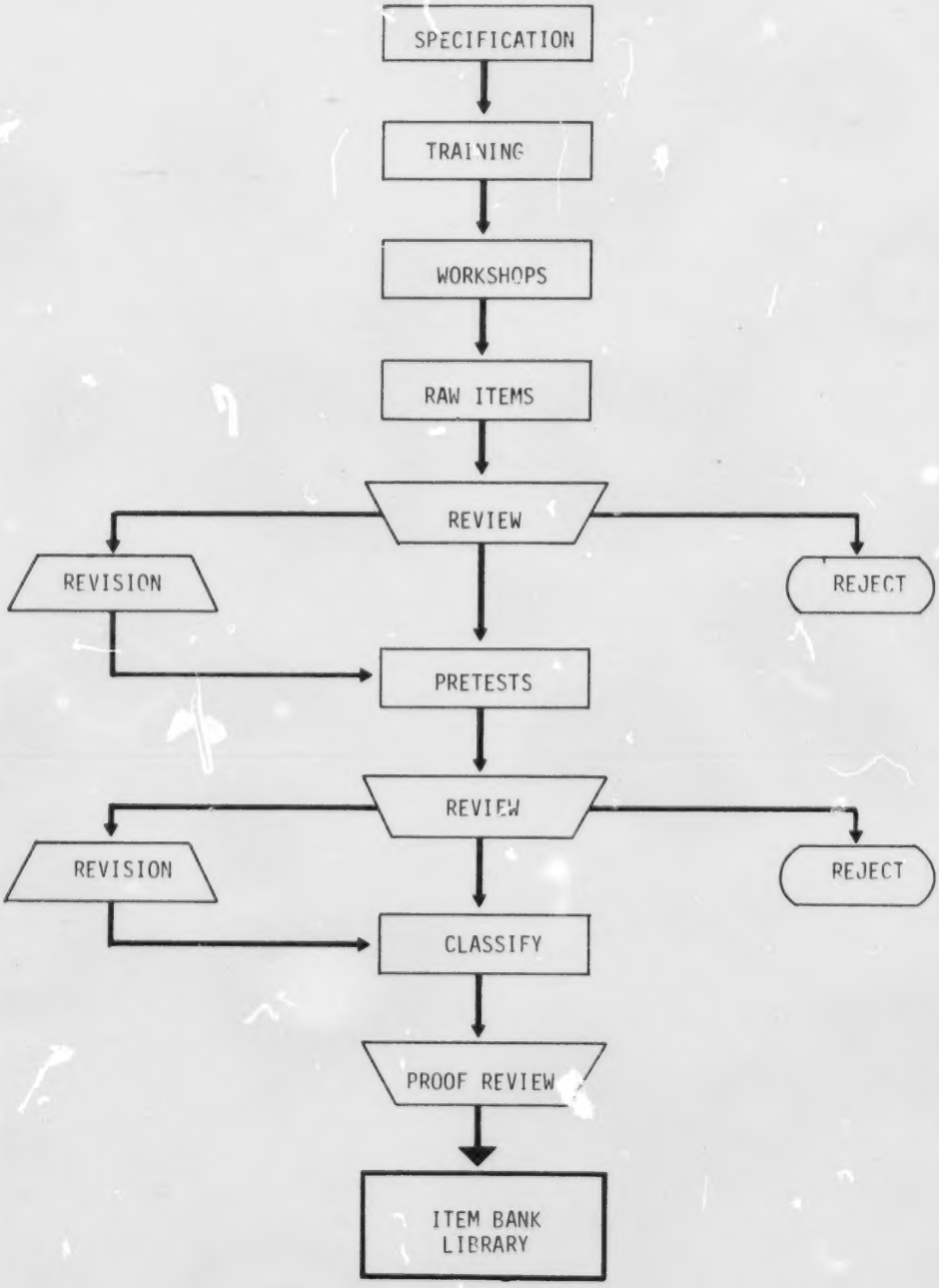
GEOGRAPHY ITEM BANK DEVELOPMENT PROCEDURES



THE GEOGRAPHY ITEM BANK

This volume of test items is an addition to the five already available to schools. The collection is intended to provide teachers with an increasingly useful resource for the classroom testing of students in Geography in Years 7 to 10.

At this time, only multiple choice items are included. This is to satisfy the immediate need of providing a service for teachers in the area of test construction where many experience greatest difficulty. Good multiple choice items involve time and expertise in writing, reviewing and editing and as each process involves different skills, are best carried out by different groups of teachers. Teachers would not normally be in a position to develop such a library of items themselves.

TEACHER INVOLVEMENT

These procedures have involved a large number of teachers from both Government and non-Government schools over the past three years. The workshops and review committees are composed of practising teachers and the pretests have been conducted in both city and country schools. The emphasis on the use of classroom Geography teachers has been deliberate in order to ensure that the Bank presents a representative cross-section of ideas which currently pervade the teaching of Geography in Years 7 to 10 in N.S.W. schools.

QUALITY CONTROL

To ensure quality, only those items which successfully passed through the item bank development procedures have been included.
Review committees at three stages as well as sharing in the general editing, also checked each item for content validity.
Pretests were used to see how items worked in the field. They help in the elimination of ambiguity and are used to establish the efficiency of the items as measuring instruments of student achievement. Three of the major statistical criteria used for the pretest analysis are:

(i) Item Facility: The facility index measures the proportion of the sample candidature who answered the question correctly. It is a measure of difficulty of the item for the sample candidature. Items in this collection have a facility index of between .30 and .85.

(ii) Item Discrimination: This index measures the degree to which success on the item is correlated with success on the total test of which the item is a part. A commonly used index of discrimination is the point-biserial correlation co-efficient. Items in this collection attained a point-biserial correlation co-efficient of at least 0.25. This means that on the pretest, each item added significantly to the total score information about the relative achievement of the candidature.

(iii) Distractor Efficiency: Within each item, each distractor was chosen by at least 5% of the total candidature, except in the case of very easy items, where an even spread of respondents was sought.

For a test to be reliable, other features apart from these three should be considered. However, the proven quality of these items, as measured by these three criteria, makes it highly likely that tests composed of tests from this collection and administered to appropriate classes will be a more reliable instrument, and provide more information about students than teachers could normally produce.

TESTING WITH MULTIPLE CHOICE ITEMS

The items are designed to provide more reliable information about the students:

- knowledge of subject content.
- comprehension of data - the translation and interpretation of data.
- ability to select and apply data in problem solving.
- ability to analyse data.
- ability to synthesize data.

It is obvious that this library concerns itself with the cognitive educational objectives only. This is in no way to suggest that the effective domain objectives are of lesser importance. However, there is yet to be produced any conclusive evidence that such objectives can be measured by this form of testing in Geography. It is acknowledged that some objectives such as

- the ability to synthesize data
- the gathering, recording and organization of data
- problem solving
- making value judgements;

are best evaluated by other instruments such as extended free response, restricted free response, research projects, etc. In addition, the course document, Geography Years 7 to 20 specifies some objectives in the form of knowledge, skills and values, which are better suited to testing by methods other than multiple choice items. Consequently, this library is unlikely to be balanced in its coverage. In no sense therefore, should this collection be regarded as defining topics, scope or the difficulty level of what is to be taught. These decisions must lie with teachers in the classroom who are familiar with the interests and abilities of their students, and the objectives of their programmes. Similarly, any school programme of evaluation of student achievement should not be confined to multiple choice items alone, but should incorporate a variety of testing instruments.

All teachers would acknowledge their responsibility to make decisions and judgements regarding their students. Any assistance which can be provided to the classroom teacher to assist him in obtaining more and better data on which such decisions are based will enhance the evaluation of students' achievement.

USES OF THE ITEM COLLECTION

It is suggested that items might be used for the following purposes:

(i) As a source of ideas for topic, unit, term tests, the results of which provide some of the information for the ranking of students for report and certification purposes. Items in the library will give a good spread of scores and significant discrimination between students, and thus should minimise a bunching of students around the middle of the scale.

(ii) As a source of items for the construction of tests which will detect individual and class strengths and weaknesses. If the library is to be used for such diagnostic testing, the teacher must be aware that the library was not specifically designed for such testing. With careful selection, it may be possible to construct tests which measure a degree of skill in a prespecified objective.

(iii) As a source of ideas for in-school item construction.

(iv) As a basis for classroom discussions (it should be noted that stimulus material was NOT designed for use with the overhead projector. The letter size used in typing items would not be legible at more than 4 metres from the screen in an average classroom.

TEST PREPARATION USING THE ITEM BANK:

Two copies, punched for ring-binding, are sent to each school - one for cutting up to produce a "printing master" and another to be left intact as a master file. If the cut-up items are used carefully and stored suitably, they should be able to be used many times for making printing masters. (See "Preparation of Printing Masters".) It is suggested that large envelopes be bound in the ring binder to store cut-up items.

In the typical presentation of multiple choice questions in this bank:

- the stimulus or general data is provided
- the stem or question is asked
- four alternatives or options to the stem are provided
- the key is the correct alternative
- the distractors are the remaining alternatives.

. Items in the library may be reproduced for classroom use in any form desired by teachers. To facilitate the preparation of printing masters particular attention has been given to both the diagrams and layout of items.

. The keys or answers to questions are provided at the end of each topic.

. The order, groupings or sub-groupings of questions are not designed to reflect any suggested order of treatment but rather to facilitate the publishing of the questions.

. It will become evident that it has been impossible to locate all questions in small watertight compartments. Questions on a particular concept or area of content may be found in more than one category.

. The numbers allocated to items are intended only to identify the items. Space has been provided for teachers to include their own numbering of questions e.g.

Questions to (P43 to P49) refers to

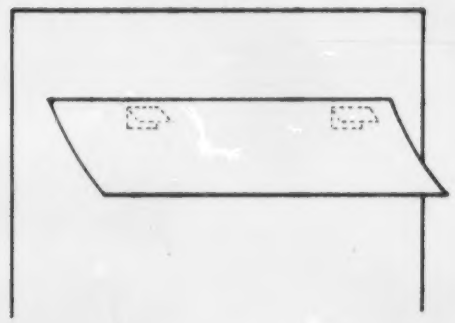
Preparation of Printing Masters

This method is recommended as it allows the prepared master to pass through a typewriter for the addition of page and question numbers etc. and prevents the electric scanner "reading" sticky tape patches and top edges of cut items.

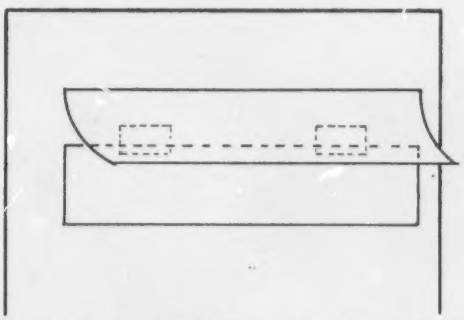
1. Type your test heading on a blank page.

2. Cut out items carefully. Always cut *very* close to and *below* the lines which separate questions.

3. Fix question 1 in position, "stamp-hinge" style:



4. Slide the top edge of Q.2 under the bottom edge of Q.1, and position Q.2 correctly.



5. Holding Q.2 in position, lift the bottom edge of Q.1 and tape Q.2 in position, so that when Q.1 is allowed to sit flat again, it completely covers the tape used to hold Q.2. Q.2 should be fastened by its top edge only.

6. Stick Q.3 in place as described for Q.2 in (4) and (5) above.

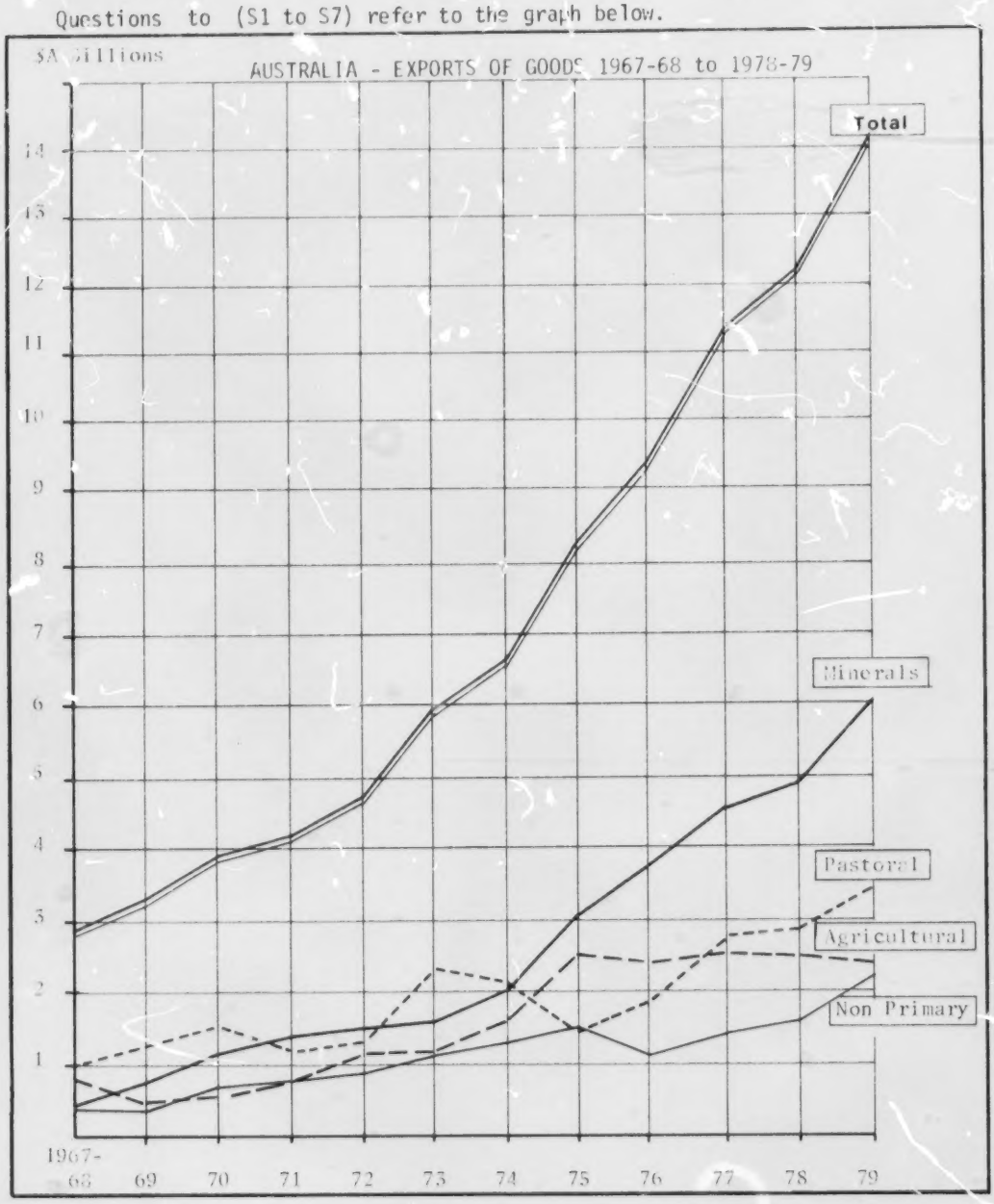
7. Number all the questions (gaps have been left in the instructions for a set of questions, for the inclusion of your question numbers e.g. Questions to (G93 to G96 are based on the graph below).

Minerals and Energy.

The items in this volume have been classified under the following broad headings:

Exports, including minerals by Australia - - -	S1 to S19
Mining Settlements - - -	S20 to S34
Aluminium/Bauxite Industry in Australia - - -	S35 to S50
Aluminium/Bauxite Industry in the U.S.A. - - -	S51 to S56
Coal Deposits and Exports of Australia - - -	S57 to S71
Iron Ore Industry - - -	S72 to S86
Oil and Gas in Australia - - -	S87 to S120
Oil and Gas, World - - -	S121 to S139
Uranium in Australia - - -	S140 to S151
Energy Resources and Demand in Australia - - -	S152 to S183
Energy Resources and Demand, World - - -	S184 to S215

Questions to (S1 to S7) refer to the graph below.



The total value of Australia's mineral exports for 1978 was

1. $2 800 million.
2. $2 900 million.
3. $4 500 million.
4. $4 900 million. S1

The fluctuations over the 10 year period in the values of Pastoral and Agricultural exports from Australia are most likely accounted for by

1. the influence of environmentalists.
2. changes in the rural output per worker.
3. changes in overseas market prices.
4. the impact of natural disasters. S2

The year in which the sheep and beef industry would have experienced relatively low incomes and low overseas prices for their products would have been

1. 1973.
2. 1975.
3. 1977.
4. 1978. S3

The industry group which has provided the largest contribution to Australia's total export income has been

1. Primary industry.
2. Secondary industry.
3. Manufacturing industry.
4. Tertiary industry S4

The country which imports the largest percentage of Australia's minerals is

1. West Germany.
2. the U.S.A.
3. United Kingdom.
4. Japan. S5

In Australia the two commodities which contribute most to the value of mineral exports are

1. bauxite and iron ore.
2. coal and bauxite.
3. iron ore and coal.
4. mineral sands and coal. S6

The commodity which contributes most to the value of the "Agricultural" sector's exports would be

1. barley.
2. beef.
3. sugar.
4. wheat. S7

Questions to (S8 to S15) refer to the tables below.

THE VALUE OF AUSTRALIAN EXPORTS, 1972-3 to 1978-79					
Item	1972-3 ($m)	1974-5 ($m)	1976-7 ($m)	1977-8 ($m)	1978-9 ($m)
Rural products					
Wool	1 262	814	1 587	1 289	1 392
Beef and Veal	652	322	621	826	1 363
Other Meat	180	101	221	248	308
Wheat	286	1 085	892	1 036	819
Sugar	250	644	638	537	470
Other crops	201	410	485	341	436
Dairy products	141	163	189	188	221
Other	347	324	588	724	740
Total rural products	3 319	3 863	5 221	5 189	6 000
Minerals					
Copper	90	163	161	119	140
Lead	95	145	184	231	280
Zinc	84	139	170	142	160
Alumina/Bauxite	216	376	674	754	868
Iron Ore	439	705	902	952	968
Steel ingots, blooms	48	149	173	138	200
Mineral sands	61	121	129	115	110
Nickel	34	109	275	211	231
Tin	24	36	42	77	39
Uranium	-	-	7	70	31
Coal	292	665	1 282	1 457	1 521
Petroleum products	64	250	333	380	410
Other	164	224	325	343	300
Total minerals	1 611	3 082	4 657	4 969	5 308
Other exports of goods	1 080	1 489	1 652	2 226	2 839
TOTAL EXPORTS $Amillions.	6 956	9 922	13 181	14 116	18 216

WHEAT - AUSTRALIA (millions tonnes)			
YEAR	PRODUCTION	EXPORTS	AVERAGE EXPORT PRICE $A per tonne
1974-75	11.4	8.1	122
1975-76	11.9	7.8	110
1976-77	11.8	8.2	92
1977-78	9.4	11.1	102
1978-79	18.3	6.9	135

In 1978-79, of the rural products, the two which contributed most to export revenue were

1. wool and wheat.
2. wheat and beef/veal.
3. wool and beef/veal.
4. sugar and dairy products. S8

The product which contributed most to the increase in the value of rural exports between 1977-78 and 1978-79 was

1. beef/veal.
2. sugar.
3. wheat.
4. wool. S9

Between 1972 and 1979 the value of Australia's exports of rural products has

1. increased at a greater rate than mineral exports.
2. increased at a slower rate than mineral exports.
3. decreased at a greater rate than mineral exports.
4. decreased at a slower rate than mineral exports. S10

In 1972-73 the mineral which earned the most export income was

1. aluminium.
2. coal.
3. iron ore.
4. petroleum. S11

Since 1972 the mineral which has experienced the greatest increase in export earnings is

1. alumina/bauxite.
2. coal.
3. iron ore.
4. tin. S12

In 1976-77 the value of wheat exports would reflect

1. a decrease in world wheat prices.
2. an increase in world wheat prices.
3. a decrease in domestic wheat prices.
4. an increase in domestic production. S13

The sector of the economy which has experienced the greatest growth in export revenue since 1972 is

1. agriculture.
2. mining.
3. manufacturing industry.
4. tertiary industry. S14

The recovery in the value of Australia's wheat exports in 1977-78 was mainly due to an increase in

1. world demand.
2. domestic demand.
3. wheat production.
4. domestic prices. S15

Questions to (S16 to S19) refer to the table below.

THE DESTINATION OF AUSTRALIA'S MAJOR MINERAL EXPORTS IN 1977-78

Mineral	Copper (%)	Lead (%)	Zinc (%)	Iron Ore (%)	Iron & Steel (%)	Black Coal (%)	Bauxite & Alumina (%)	Total Exports (%) (ALL MINERALS)
Asia								
Japan	33.7	3.3	23.5	80.6	10.4	77.8	N.A.	51.6
Total	36.0	15.8	64.7	85.9	61.7	82.5		62.1
Europe								
EEC	43.2	15.0	10.1	11.6	7.2	11.4	N.A.	13.2
U.K.	16.2	54.5	1.6	1.0		3.0		6.7
Total	59.5	70.6	14.0	13.8	14.1	16.6		23.2
America								
U.S.A.	2.5	11.5	11.5	0.3	1.9	0.2	N.A.	8.2
Total	2.5	11.7	11.6	0.3	20.4	0.5		11.8
Oceania								
N.Z.	1.1	1.9	8.7		1.1		N.A.	1.8
Total	1.1	1.9	8.7		1.7			1.8
Exports Value in millions $A.	149.0	231.4	149.7	952.4	207.4	1 398.5	750.0	$A. 4 609m. (all mineral exports)

The country which purchased the greatest percentage of Australia's mineral exports in 1977-78 was

1. Japan.
2. China.
3. the U.S.A.
4. New Zealand. S16

The value of mineral exports to Japan in 1977 -78 was approximately

1. $ 50 million.
2. $1 300 million.
3. $2 400 million.
4. $4 600 million. S17

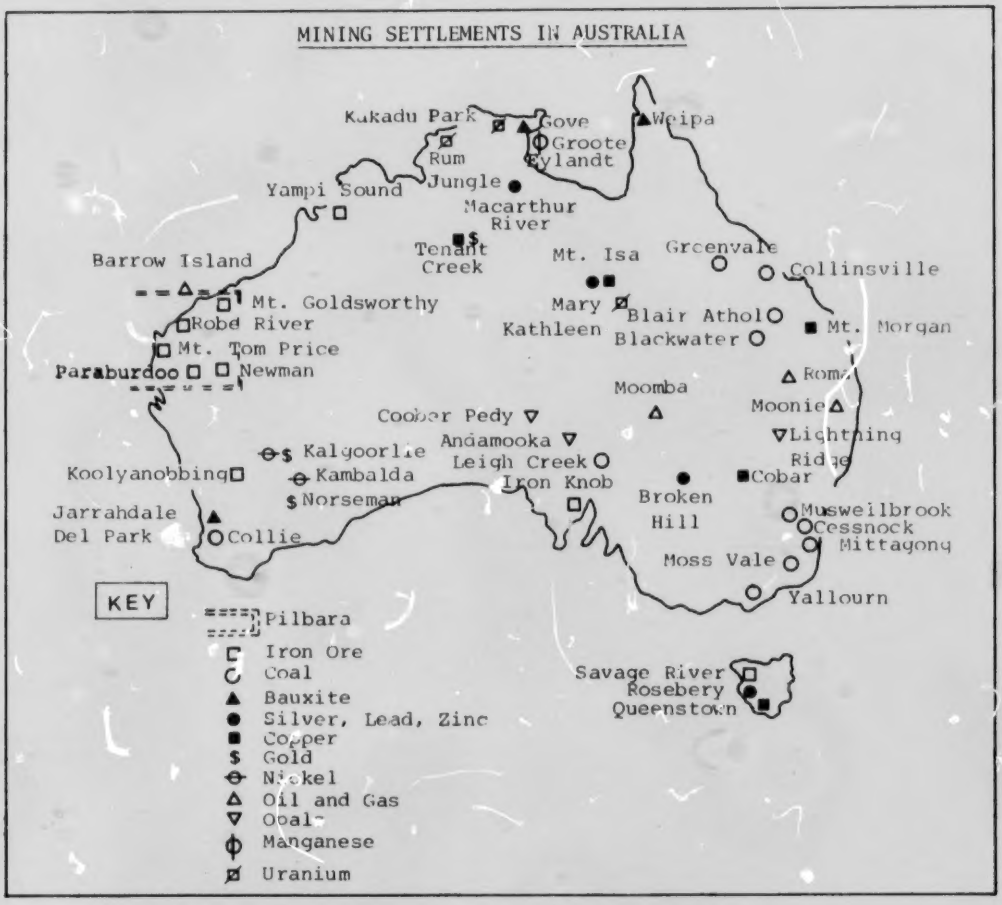
The mineral which contributed most to Australia's mineral export income in 1977 - 78 was

1. iron ore.
2. zinc.
3. black coal.
4. bauxite. S18

Australia's mineral exports are most dependent on the

1. automobile industry in the U.S.A.
2. electronics industry in Japan.
3. steel industry in the U.S.A
4. steel industry in Japan. S19

Questions to (S20 to S29) refer to the map below.



The mineral responsible for the greatest number of mining settlements in Australia is

1. bauxite.
2. coal.
3. iron ore.
4. uranium. S20

The iron ore mining centres in Western Australia located outside the Pilbara Region are

1. Tennant Creek and Jarrahdale.
2. Mt. Tom Price and Robe River.
3. Yampi Sound and Koolyanobbing.
4. Iron Knob and Barrow Island. S21

Which one of the following combinations of location and minerals is correctly matched?

1. Kambalda - nickel.
2. Broken Hill - iron ore.
3. Groote Eylandt - bauxite.
4. Coober Pedy - natural gas. S22

The mineral which contributes most to Australia's mineral export income is mined at

1. Blair Athol.(Queensland)
2. Broken Hill (N.S.W.)
3. Gove. (N.T.)
4. Yampi Sound (W.A) S23

The major raw material of the aluminium industry is mined at

1. Blackwater.
2. Mt. Isa.
3. Weipa.
4. Yampi Sound. S24

The major raw material of the steelworks in Port Kembla would be mined at

1. Cessnock.
2. Iron Knob.
3. Mittagong.
4. Tennant Creek. S25

Koolyanobbing and Collie in Western Australia would supply raw materials for the steelworks at

1. Kwinana.
2. Newcastle.
3. Westernport.
4. Whyalla. S26

The most important factor in the location of the steelworks at Newcastle and Port Kembla was the proximity of

1. coal.
2. iron ore.
3. limestone.
4. markets. S27

The steelworks at Whyalla obtains its iron ore from

1. Iron Knob (S.A.)
2. Koolyanobbing (W.A.)
3. Savage River (Tas.)
4. Yampi Sound (W.A.) S28

The product obtained from the raw material mined at Mary Kathleen in Queensland is

1. aluminium.
2. asbestos.
3. copper.
4. yellowcake. S29

Questions to (S30 to S34) refer to the passage below.

NEW MINING TOWNS

Because Australia's mineral deposits exist in such remote areas, mining companies often do not have the benefit of established towns, railways, airports, mine roads, electric power and water supplies. Some have to be supplied by the companies at their expense as the mine and ore handling and processing facilities are built. The provision of this infrastructure often trebles the cost of development of a mine.

Since 196[illegible], 24 new towns have been built with a total population of more than 38 000. Most range in population from a few hundred to about 4 500. In the last 10 years the mining industry has built nearly 11 000 houses and many single men's quarters and flats. Twelve new ports, two of which can accommodate vessels of more than 160 000 dead weight tonnes have been constructed. More than 20 airfields, eight of which have been developed to full commercial standard capable of handling jets, have been built.

The provision of transport, power, water and accommodation facilities in a mining town is called its

1. agglomeration.
2. infrastructure.
3. mineral reserves.
4. settlement. S30

Mining companies must usually establish their own service facilities in remote mining towns because

1. government legislation forces them to do so.
2. it lowers the cost of the mining project.
3. the government does not usually provide such services.
4. government revenue is insufficient to met such costs. S31

If the cost of establishing a mine was $1 000 million, the infrastructure needed could increase the cost of the project to

1. $2 000 million.
2. $3 000 million.
3. $4 000 million.
4. $5 000 million. S32

Extensive port development, as close as possible to the area mined, usually occurs because

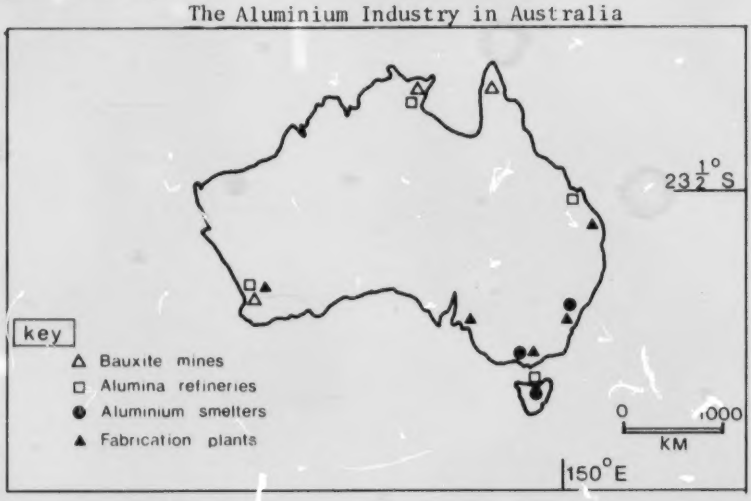
1. it is necessary for people to commute to the area.
2. mineral deposits are far removed from their markets.
3. all mining projects are located on the coastal fringe.
4. ports are cheap and easy to construct. S33

Mining companies often have <u>on site</u> initial processing of the ore mined in order to

1. provide employment.
2. increase the demand.
3. reduce transport costs.
4. increase ore output. S34

Questions to (S35 to S41) refer to the map and passage below.

The Aluminium Industry in Australia



To some extent there is a little aluminium (although not in metallic form) in almost any handful of earth, but only earth with an aluminium oxide content of 45% or more is practical for making metal economically. The richest deposits have been found in a wide band on either side of the equator. Known deposits hold enough reserves to furnish the world with aluminium for *thousands* of years. In Australia bauxite deposits are found in the Darling Ranges, at Weipa and the Gove Peninsula on the Gulf of Carpentaria. Recently additional deposits have been reported in Western Australia, north of Perth and the Kimberley Ranges.

The raw material from which aluminium is derived is

1. limestone.
2. haematite.
3. bauxite.
4. limonite. S35

The bauxite mines in production in Western Australia are located in the

1. Australian Alps.
2. Flinders Ranges.
3. Darling Ranges.
4. Hammersley Ranges. S36

Deposits with an aluminium oxide content of 45% or more are needed for economical metal making because

1. it is too expensive to refine lower grade ore.
2. man does not have the technology to refine lower grade ore.
3. deposits do not occur with less oxide than 45%.
4. the result would be a lower grade of aluminium. S37

Aluminium smelters are located in

1. N.S.W., Victoria and Tasmania.
2. Queensland, Tasmania and Western Australia.
3. N.S.W., the Northern Territory and South Australia.
4. Western Australia, the Northern Territory and Tasmania. S38

The fabrication plants for aluminium products are located near

1. markets.
2. raw materials.
3. alumina refineries.
4. aluminium smelters. S39

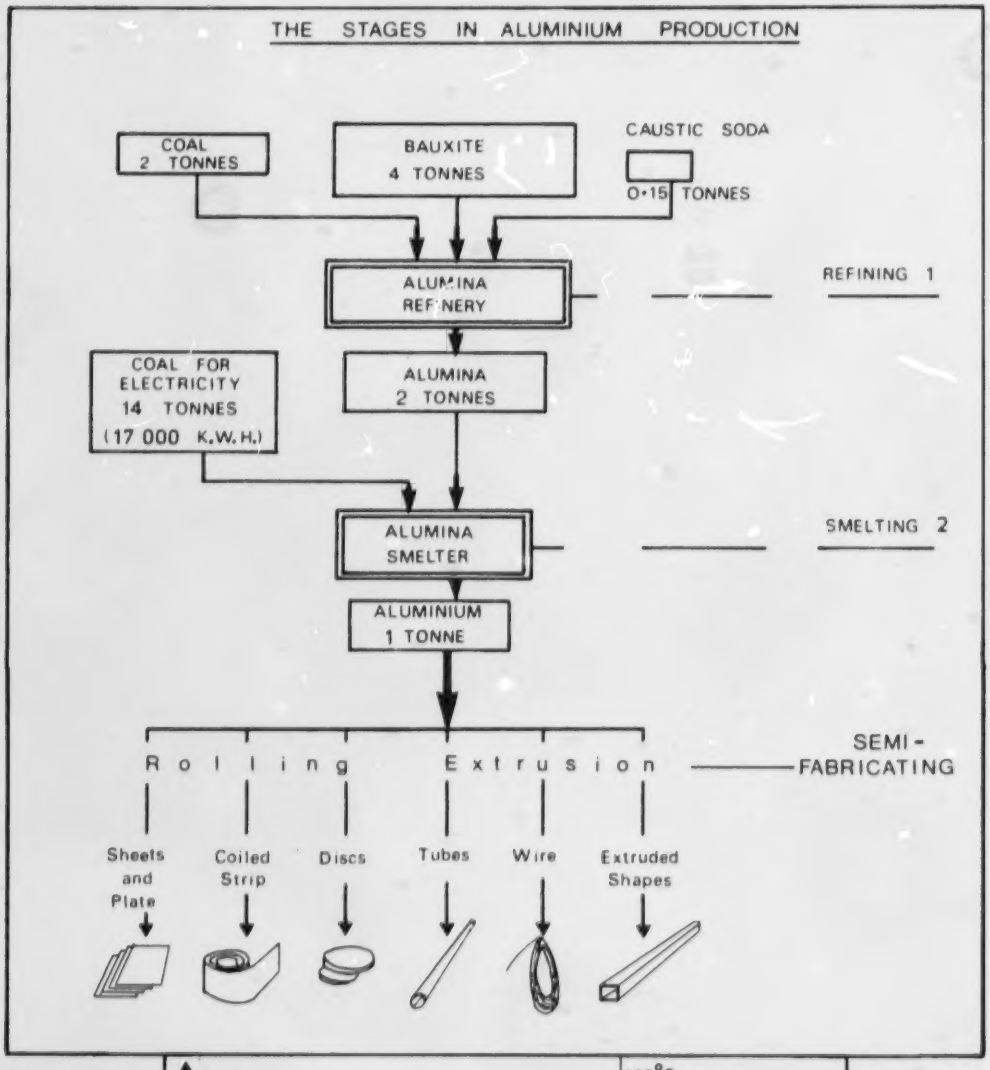
The bauxite mine which does not have an alumina refinery close by is located at

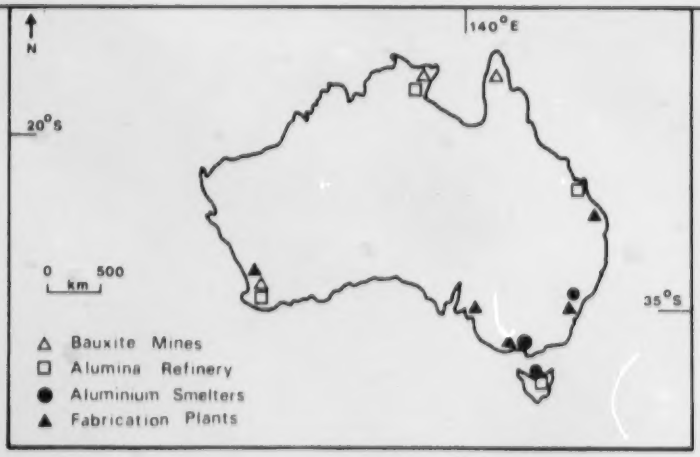
1. Gove.
2. Weipa.
3. Jarrahdale.
4. Whyalla. S40

The alumina refinery at Gladstone in Queensland is approximately 1 600 kilometres from the

1. Gove bauxite mines.
2. Weipa bauxite mines.
3. Cessnock aluminium smelter.
4. Westernport aluminium smelter. S41

Questions to (S42 to S46) refer to the diagram below.





The major raw material necessary for the production of aluminium is

1. bauxite.
2. caustic soda.
3. coal.
4. haematite. S42

The product refined from bauxite is called

1. alumina.
2. aluminium.
3. coke.
4. lignite. S43

An important factor encouraging the location of alumina plants near bauxite deposits is the

1. consequent weight reduction.
2. availability of labour.
3. proximity of markets.
4. availability of cheap power. S44

The smelting of aluminium would most efficiently be carried out near

1. markets.
2. raw materials.
3. labour supplies.
4. cheap sources of power. S45

The fabrication of aluminium products would most efficiently be located near

1. markets.
2. raw materials.
3. cheap land.
4. cheap sources of power. S46

Questions to (S47 to S51) refer to the table below.

ALUMINIUM PRODUCTION AND CONSUMPTION

AUSTRALIA				SELECTED OTHER COUNTRIES		
Year	Production (Tonnes)	Consumption (Tonnes)	Per Capita Consumption (Kilogrammes)	Per Capita Consumption (Kilogrammes) U.S.A.	JAPAN	U.K.
1966	92.000	86 676	7.4	21.0	5.1	9.2
1967	92.300	91 734	7.7	19.1	6.5	9.3
1968	97.300	103 520	8.5	21.4	7.9	9.9
1969	132.100	127 277	10.2	22.9	10.3	10.8
1970	205.600	132 928	10.5	20.4	11.2	11.1
1971	223.600	134 639	10.4	22.2	11.7	10.0
1972	205.700	139 759	10.6	25.7	14.7	11.0
1973	207.300	177 626	13.3	29.5	17.1	12.5
1974	219.300	203 182	14.9	27.4	14.7	12.4
1975	213.900	157 744	11.5	20.4	12.2	9.8
1976	232.300	190 809	13.7	26.3	16.1	11.2
1977	247.600	199 844	14.2	n.a	n.a	n.a

Australia's per capita consumption of aluminium was highest in

1. 1970.
2. 1972.
3. 1974.
4. 1976.

S47

The country with the greatest consumption of aluminium is

1. Japan.
2. Australia.
3. the U.S.A.
4. the U.K.

S48

In 1976 aluminium production in Australia was able to

1. satisfy our own needs only.
2. export excess production.
3. satisfy most of our own needs.
4. supply all the needs of the Western World.

S49

The amount of aluminium exported by Australia in 1977 was approximately

1. 14 200 tonnes.
2. 48 000 tonnes.
3. 200 000 tonnes.
4. 247 000 tonnes.

S50

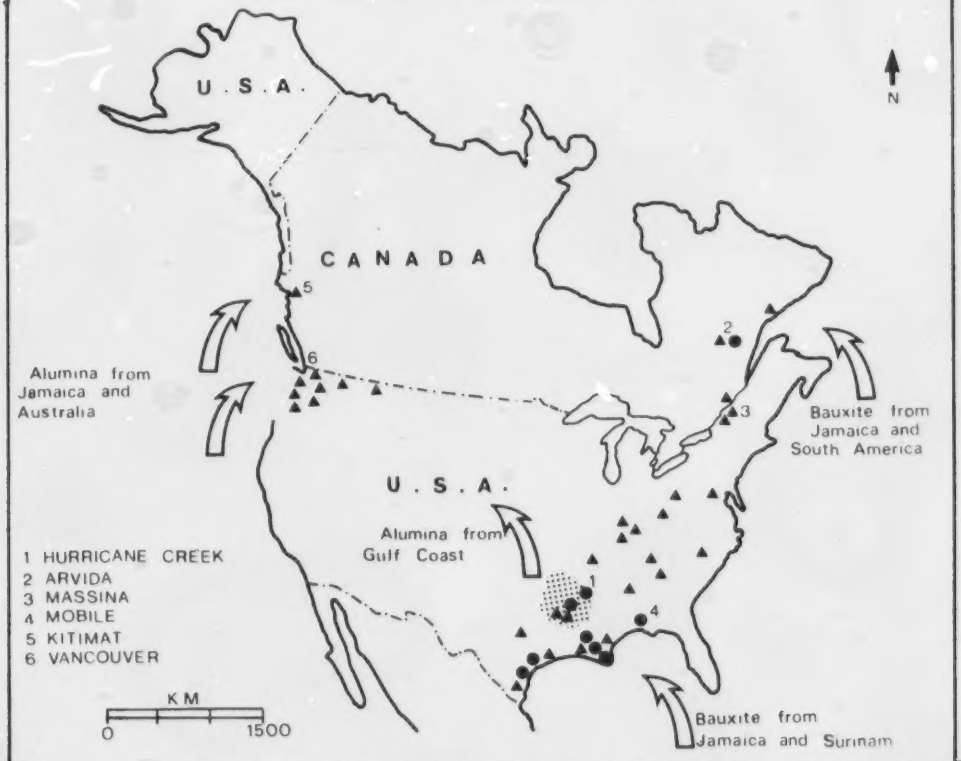
The year in which a world recession in industrial output affected the consumption of aluminium was

1. 1972.
2. 1973.
3. 1975.
4. 1976.

S51

Questions to (S52 to S56) refer to the information below.

THE ALUMINIUM INDUSTRY IN NORTH AMERICA



KEY:
- ● Alumina refineries - refineries producing alumina from bauxite
- ▲ Aluminium smelters - concentrators producing metallic aluminium from alumina.
- ▒ Main bauxite mining region of the U.S.A.

The refineries are strongly concentrated in the south-east to be near the small domestic deposits or nearby Caribbean sources of imported bauxite. The smelters, however, are located near the sources of cheap and abundant power - the Pacific North-West, the Appalachians, and the Gulf oil and gasfields.

The U.S.A.'s alumina refineries are located in the

1. north-west.
2. south-west.
3. north-east.
4. south-east.

S52

The Hurricane Creek alumina refinery is located inland because of the local supply of

1. bauxite.
2. coal.
3. electricity.
4. oil.

S53

The aluminium smelters located in the west of North America rely on imported

1. alumina.
2. bauxite.
3. coal.
4. oil. S54

The aluminium smelters located in the Pacific North West rely on power generated mainly by

1. coal.
2. oil and gas.
3. nuclear reactors.
4. hydro-electricity. S55

Canada's only bauxite refinery is located at

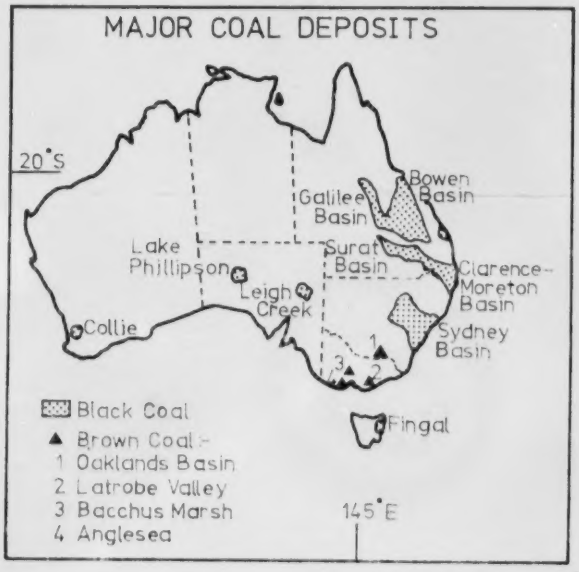
1. Arvida.
2. Kitimat.
3. Massina.
4. Mobile. S56

Questions to (S57 to S62) refer to the information below.

BLACK COAL - THE RESURGENCE OF AN INDUSTRY - 1976.

Coal has superseded greasy wool as Australia's largest single export earner. Thirty years ago, exports were negligible and the coal-mining industry was in a state of decay. The transformation from rags to riches has been made possible by a revolution in production methods and the evolution of new markets, particularly the Japanese steel industry. More recently, the sharp increase in crude oil prices has added another dimension to market prospects for coal. Australia is the eighth-largest black coal producing nation but accounts for only 3% of the world's production. As an exporter, however, Australia ranks third after the United States and Poland. Production reached a peak of 70 million tonnes in 1974/75, a more than five-fold increase in 30 years. The main catalyst for this growth was the export trade, which also peaked in 1974/75 at 33 million tonnes, compared with less than 100 000 tonnes in the immediate post-war period. Although the volume sold overseas fell in 1975/76, higher prices negotiated in 1975 resulted in the value of sales rising by $300m. to a record $974m. By 1978-79 exports were over $1400m.

Coal mined in New South Wales is bituminous and nearly all is mined in the Sydney Basin. More than two thirds is high volatile soft coking coal and steaming coal, most of which is mined in the Newcastle and Singleton districts. The State producing the largest amount of coal is New South Wales, accounting for 60% of production. The main growth in the last decade however, has been in Queensland, which now produces 34% of the national output. Rapid growth in Queensland has been based on the development of large-scale and comparatively low-cost open-cut mines.



The state with the greatest dependence on brown coal is

1. Victoria.
2. Queensland.
3. South Australia.
4. New South Wales. S57

Coal has become Australia's largest single export earner because

1. the government has subsidised the coal industry for the first time.
2. new coal deposits have proved to be richer and larger than was first thought.
3. of the decline in the exports of the wool industry and consistent exports of coal.
4. of the opening of new markets in Japan, and new production methods. S58

What was Australia's position in world production and export of coal in 1976?

1. It produced 3% of the world's production and was the third largest exporter.
2. It produced 60% of the world's production and was an insignificant exporter.
3. It was the eighth-largest producer but we needed the coal for our own use.
4. It produced 60% of the world's production and was the third-largest exporter. S59

What percentage of Australia's total production of coal is produced by N.S.W. and Queensland?

1. 34%
2. 60%
3. 94%
4. 97% S60

The main factor in the growth of the coal industry in Australia has been the

1. increased home consumption.
2. decreased imports of coal products.
3. increased overseas demand.
4. decreased production by the major exporters. S61

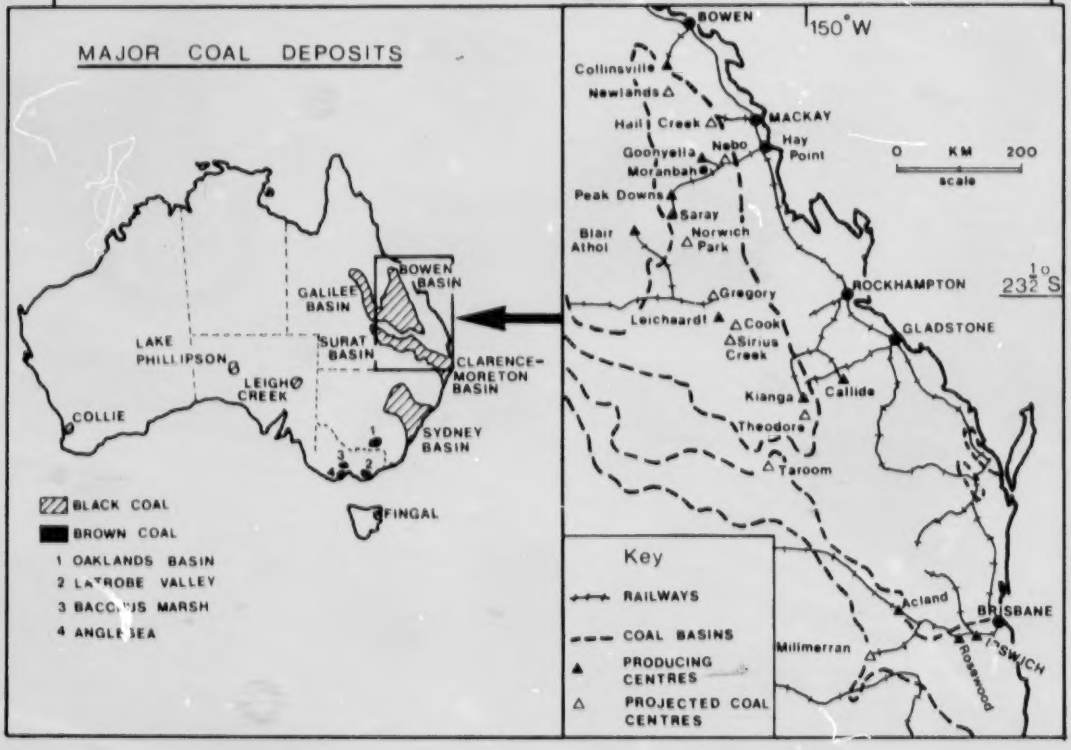
The coal industry in Queensland has a cost advantage over the major mines in N.S.W. in that it

1. mines bituminous coal.
2. mines high quality brown coal.
3. uses shaft mining methods.
4. uses open-cut methods. S62

Questions to (S63 to S67) refer to the information below.

NEW EXPORT PROJECTS

Numerous projects to produce coal for export are on the drawing boards (see map). The main area of interest for the extraction of high-quality coking coal is in the Bowen Basin. Development of the most important projects (Norwich Park, Hail Creek, Nebo), however, were delayed initially by fears that the export market might become over-supplied and because the potentially high proportion of foreign ownership was unacceptable to the Commonwealth Government. Most developers have now taken steps to conform with the requirement that Australian interests own at least 50% of new mining projects or that the Australian equity will be increased to 50% by some future date. Another factor hindering development was the coal export levy, introduced in the 1975 Budget, but the Government is now committed to a major reduction in the level of the duty.



Coal mined at Goonyella is exported through the port at

1. Gladstone.
2. Rockhampton.
3. Bowen.
4. Hay Point. S63

The initial development of some of these projects was delayed because of

1. lack of overseas funds to develop the fields.
2. fears that the export market may become oversupplied.
3. a government decision to stop the export of coal.
4. the discovery of new oil deposits in Bass Strait. S64

Brown coal is most significant to the power resources of

1. N.S.W.
2. Victoria.
3. Queensland.
4. South Australia. S65

The projected coal producing centres in Queensland are mainly in the

1. Clarence-Moreton Basin.
2. Galilee Basin.
3. Surat Basin.
4. Bowen Basin. S66

A coal producing centre within the Clarence-Moreton Basin is

1. Taroom.
2. Ipswich.
3. Leichaardt.
4. Kianga. S67

Questions to (S68 to S71) refer to the article below.

THE EFFECT OF THE ENERGY CRISIS IN AUSTRALIA

Coal makes a comeback as a fuel for power generation.

A 300-tonne load of Collie coal was recently shunted into the South Fremantle power station- the first delivery there for six years. Originally designed to burn coal, the station was converted to oil firing in 1968. A wise decision then - oil being cheap, clean and easy to handle. Unfortunately, furnace oil is not cheap any more. In Australia, the main sources for this product are imported crudes (Australian crude oils are deficient in the necessary "heavy ends") and the price of imported crude oil has risen three to four times in the last 18 months. There's also a new adverse element: anxiety about future supplies. Following the last Arab-Israeli War, the precedent now exists to use oil as a powerful instrument of war and foreign policy. So South Fremantle is being converted back to coal. One turbine is already operating on steam from a coal-fired boiler and the rest will be progressively converted over the next few months.

With what state of Australia is this article concerned?

1. New South Wales.
2. Tasmania.
3. South Australia.
4. Western Australia. S68

The South Fremantle power station was converted from coal to oil burning in 1968 because

1. there were inadequate supplies of local coal.
2. local oil supplies were readily available and cheap.
3. petroleum was economical and efficient.
4. the government preferred to import oil. S69

Australia found it necessary to import furnace oil because

1. it was cheaper than local supplies.
2. local wells could not supply the heavy oil needed.
3. Australian oil tankers required the cargo.
4. it was part of the government's energy policy S70

Why is the South Fremantle power station being reconverted to burn coal?

1. Coal is the cleanest burning fuel.
2. It is not Government policy to use oil as a fuel.
3. New discoveries of coal are high quality heating coals.
4. There is doubt about future economical supplies of oil. S71

Questions to (S72 to S76) refer to the article below.

THE IRON ORE INDUSTRY IN AUSTRALIA

Australia is the world's largest exporter of iron ore and is second only to the U.S.S.R. as a producer. In 1975, production reached 97.7m tonnes of which 82% was exported. After wool, coal, and wheat, it is the fourth most valuable commodity sold overseas.
The main expansion of the industry has been centred on the 32 billion tonnes reserves of the Pilbara region of north-west Australia which accounts for nearly 90% of iron ore mined in Australia. The basis for development was the acquisition of long-term export contracts in the 1960s to feed the rapid growth of the Japanese steel industry. So far, about $1.8 billion has been spent establishing ore projects in the Pilbara and the figure could exceed $5 billion by 1985 if all planned developments eventuate.
The iron ore deposits in the Pilbara lay unrevealed until the 1960s because of an export embargo imposed in 1938 when it was feared that Australian iron ore reserves were small. The domestic steel industry was supplied from the Middleback Range of South Australia and there was little incentive to explore for more for the domestic market. Despite the lack of incentive to explore, the indications were that the export embargo was unnecessary. In December, 1960, the embargo was relaxed and in March 1961, the W.A. Government called tenders for the right to mine major high-grade deposits not covered by lease arrangements. An exploration rush then ensued and the disclosure of billions of tonnes of reserves caused the export controls to be liberalized further in June 1963. The plentiful supply of high-grade iron ore, for which domestic demand was comparatively small, and its geographic position made Australia a natural source of supply for Japan. Although Japan remains the main market, its relative importance has fallen from 92% of Australia's iron ore exports in 1966 to 77% in 1975. Contracts have also been negotiated to supply steel mills in Western Europe, the United States, China and South Korea.

Source: Bank of N.S.W. Review, Oct. 1976.

What is an 'export embargo'?

1. Government action to stop the import of a product.
2. A government subsidy to aid the export of a product.
3. A government subsidy to aid the import of a product.
4. Government action to stop the export of a product S72

Why is the Pilbara Region of Western Australia well located for exporting to Japan?

1. The deposits are located on the coast.
2. It is relatively close to the market.
3. The Australian iron ore is of high quality.
4. The government has negotiated contracts. S73

Why did the export of Australian iron ore increase rapidly during the 1960s?

1. The export embargo was lifted and the Japanese Steel Industry expanded rapidly.
2. Huge new deposits of iron ore were discovered and new markets developed in the U.S.A.
3. The government introduced subsidies to help the exploration for new deposits.
4. A world shortage of iron ore stimulated greater production. S74

An advantage of the open cut mining methods used in the Pilbara is that

1. it is easier to reach deep seams of ore.
2. there is less opposition from conservationists.
3. the restoring of the landscape is fairly inexpensive.
4. it often costs less than shaft mining. S75

Over long distances large ocean freighters are often used to transport ore because

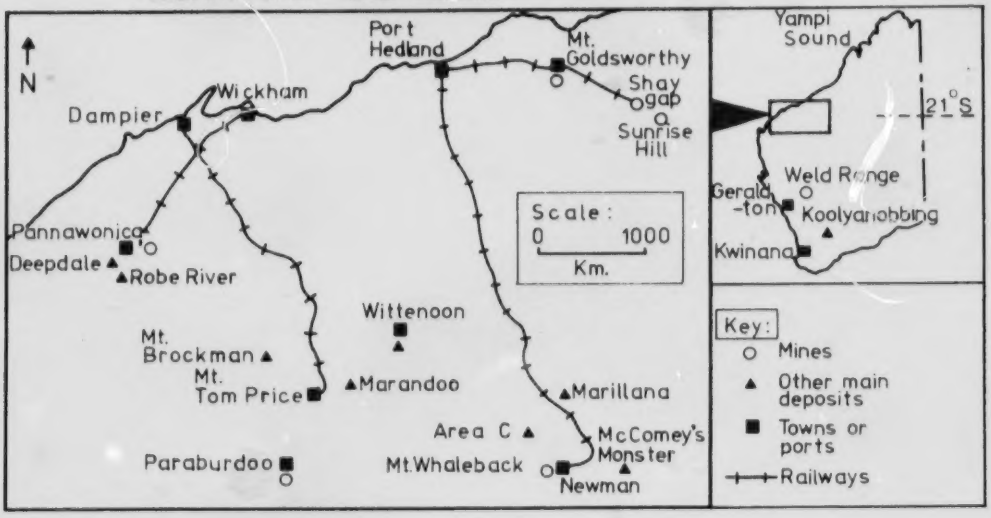
1. more ore can be carried by ship than by rail.
2. a large number of men work on ships.
3. ships are a relatively cheap form of transport.
4. there is less industrial trouble on the high seas. S76

Ocean oil rigs have been developed because

1. oil is obtained from sea dwelling creatures.
2. off shore oil is a commercial proposition.
3. oil from the continental shelf is of a high quality.
4. on shore oil exploration is opposed by environmental groups. S77

Questions to (S78 to S86) refer to the map and table below.

PILBARA IRON ORE REGION



IRON ORE PROJECTS IN THE PILBARA

Mines	Proven and Indicated Reserves		Annual Capacity (Million tonnes)		Pellet Plant
	Ore m. tonnes	Average Fe%	Present	Planned	
Mt. Tom Price Paraburdoo	647 503	64 63	46		Dampier
Mt. Whaleback	2100+	64	40	70	
Pannawonica Deepdale	160 1500	57 57	20 5	15 (1980s)	Cape Lambert
Mt. Goldsworthy Shay Gap Sunrise Hill Area C	64 750+	n.a 62.5	8 6	 12 (1980) 18 (1981)	 Port Hedland
Robe River	700	less than 50	20		
Marandoo	500+	63		18 (1980)	

The Pilbara Iron Ore Region of Western Australia is located in the

1. North-east.
2. South-east.
3. North-west.
4. South-west.

S78

The most western iron ore deposit in the Pilbara Region is

1. McCamey's Monster.
2. Sunrise Hill.
3. Deepdale.
4. Mt. Goldsworthy. S79

The Newman iron ore is exported through the port of

1. Wickham.
2. Geraldton.
3. Kwinana.
4. Port Hedland. S80

Outside the Pilbara Region, another large deposit of iron ore occurs at

1. Port Kembla.
2. Koolyanobbing.
3. Mt. Goldsworthy.
4. Newcastle. S81

According to the table, the largest deposit of iron ore in the Pilbara region occurs at

1. Mt. Tom Price.
2. Mt. Goldsworthy.
3. Mt. Whaleback.
4. Pannawonica. S82

The highest concentration of iron (Fe) in the Pilbara fields is

1. 80%.
2. 64%.
3. 63%.
4. 57%. S83

The pellet plant referred to in the table as Cape Lambert would be located nearest to

1. Port Hedland.
2. Kwinana.
3. Wickham.
4. Deepdale. S84

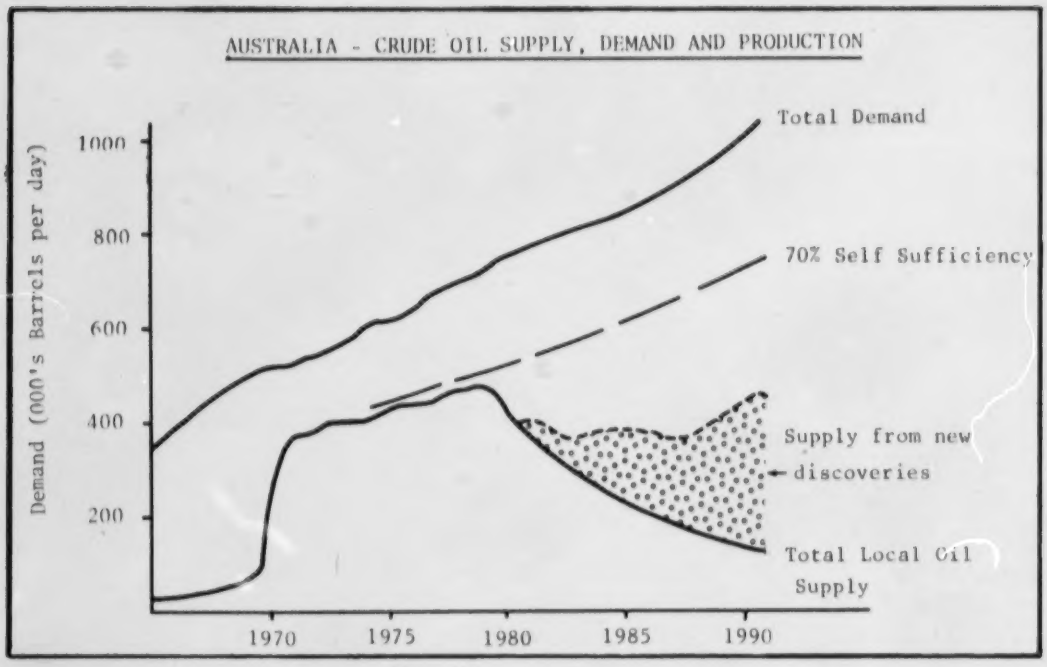
Pelletising plants, where the iron ore is concentrated, are located

1. at the mine site.
2. where electricity is cheap.
3. near the steel plant.
4. near the ore exporting port. S85

The Pilbara mine which will be exhausted first will be

1. Paraburdoo.
2. Mt. Tom Price.
3. Mt. Whaleback.
4. Mt. Goldsworthy. S86

Questions to (S87 to S94) refer to the graph below.



The graph indicates that by 1990 the total Australian demand for crude oil in barrels per day will be

1. 893 000
2. 1 000 000
3. 1 500 000
4. 2 130 000 S87

The graph of total demand for crude oil indicates the amount of crude

1. required for Australian needs.
2. required to enable exports of surplus.
3. potential of the Australian oil fields.
4. needed to be imported to meet Australian demand. S88

The position of oil production in Australia indicates

1. there is little need for concern over liquid fuels.
2. Australia will be 70% self-sufficient by 1990.
3. declining Australian resources and the need for exploration.
4. that by 1990 demand will exceed production by 1 million barrels per day. S89

In 1980 indications regarding Australia's demand and supply of crude oil are that on present production figures Australian crude oil supply will be

1. greater than demand by approximately 350 000 barrels per day.
2. greater than demand by approximately 500 000 barrels per day.
3. less than demand by approximately 350 000 barrels per day.
4. less than demand by approximately 500 000 barrels per day. S90

The demand for oil in Australia since 1965 has

1. gradually decreased.
2. steadily increased.
3. remained constant.
4. initially increased and then decreased. S91

The important fact about our oil resources indicated by the graphs of consumption and supply of oil in Australia is that oil

1. exploration will cease after 1990.
2. consumption will decline after 1990.
3. exports will rise to meet total demand.
4. resources are being rapidly depleted. S92

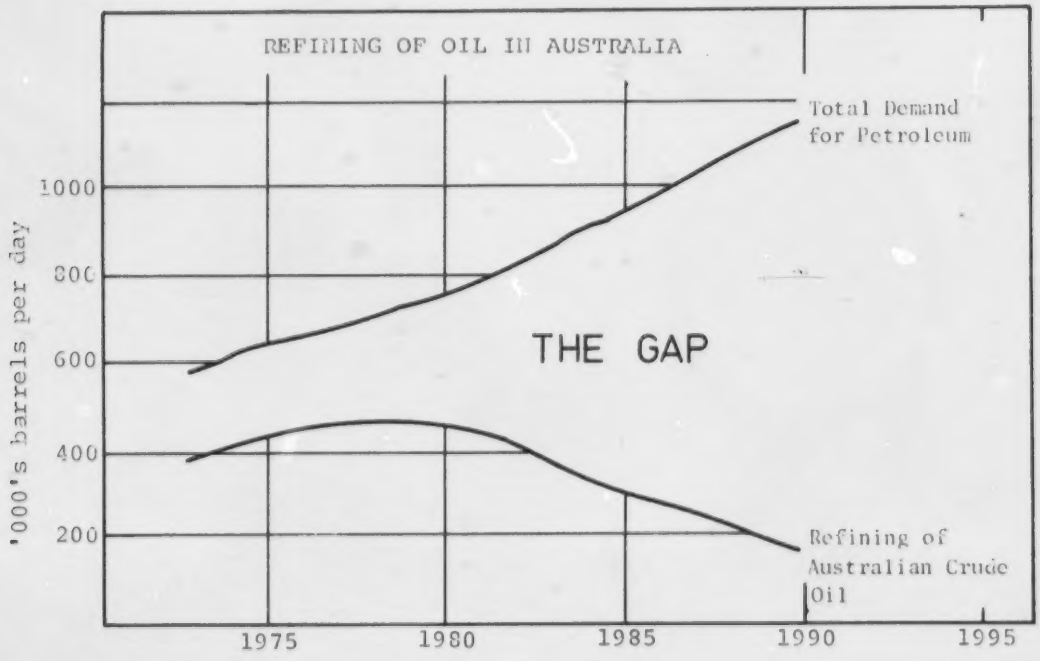
The supply of oil from the discovery of new resources would improve Australia's international trading position by

1. reducing exports.
2. reducing imports.
3. increasing exports.
4. increasing imports. S93

If Australia is to approach its goal of 70% self sufficiency in petroleum production into the 1990's, a policy of the Government should be to

1. provide incentives for large scale exploration.
2. import all crude oil from overseas.
3. reduce its exports of crude oil.
4. increase the recovery rate from existing reserves. S94

Questions to (S95 to S100) refer to the graph below.



In 1980, the contribution of Australian crude to the total refining of petroleum will be how many thousands of barrels per day?

1. 300.
2. 450.
3. 750.
4. 1 050.

S95

By 1985, Australia's import requirements of petroleum will be how many thousands of barrels per day?

1. 300.
2. 650.
3. 950.
4. 1250.

S96

The future pattern of Australia's petroleum requirements indicates that Australia will need

1. to import less oil.
2. to import more oil.
3. to export more oil.
4. less oil for its requirements.

S97

The graph indicates that Australia in regard to its oil energy requirements will become

1. less dependent on its exports of oil.
2. more dependent on other countries.
3. less dependent on imports of oil.
4. more self sufficient.

S98

The 'gap' referred to in the graph is the difference between the

1. world supply of oil and the world demand for oil.
2. supply of Australian oil and the demand for Australian crude oil
3. world supply of oil and the Australian consumption of oil.
4. supply of Australian crude and the Australian consumption of oil.

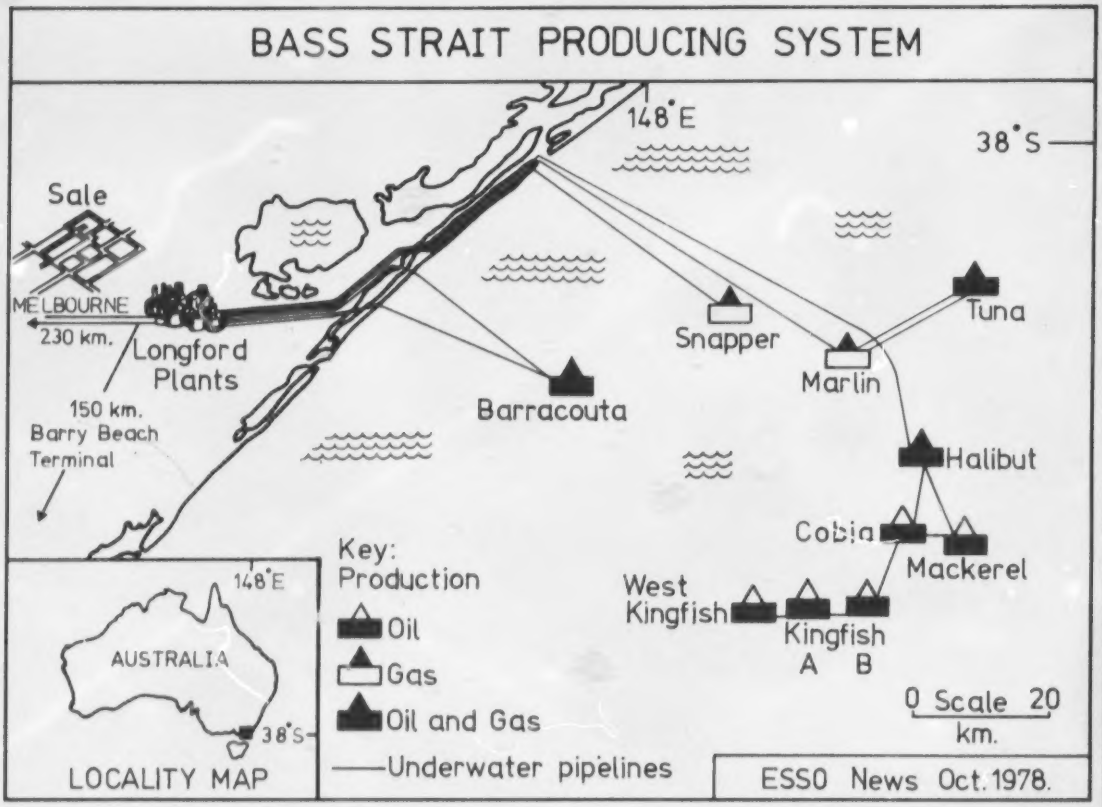
S99

The 'gap' for Australia referred to in the graph can be reduced by

1. lowering the price of Australian crude oil.
2. lowering world prices paid for crude oil.
3. exploration and discovery of new oil reserves overseas.
4. exploration and discovery of new oil resources in Australia.

S100

Questions to (S101 to S106) refer to the graph and table below.



ESSO-B.H.P. GIPPSLAND BASIN FIELDS (1978).

Field	Date Discovered	Platform	Water Depth Metres	Production
Barracouta	1965	1 × 10 wells	45 m	1969
Marlin	1966	1 × 24 wells	58 m	1970
Kingfish A+B	1967	2 × 21 wells	77 m	1971
Halibut	1967	1 × 24 wells	72 m	1970
Snapper	1968	1 × 27 wells	55 m	1980
Tuna	1968	1 × 18 wells	56 m	1979
Cobia	1972	1 × 21 wells	76 m	1982
West Kingfish	1977	1 × 27 wells	76 m	1982

The Gippsland Basin is off the coast of

1. Western Australia.
2. Queensland.
3. Victoria.
4. New South Wales.

S101

The sea depth above the oil and gas fields of the Gippsland Basin is between

1. 0 and 40 metres deep.
2. 40 and 80 metres deep.
3. 80 and 120 metres deep.
4. 120 and 160 metres deep. S102

A Gippsland field which is a commercial producer of oil and gas is

1. Marlin.
2. Kingfish.
3. Snapper.
4. Barracouta. S103

The length of the pipeline which links the Kingfish Field with the coast is approximately

1. 40 kilometres.
2. 60 kilometres.
3. 80 kilometres.
4. 100 kilometres. S104

The service centre for the Gippsland Basin fields would be

1. Longford.
2. Sale.
3. Melbourne.
4. Barry Beach. S105

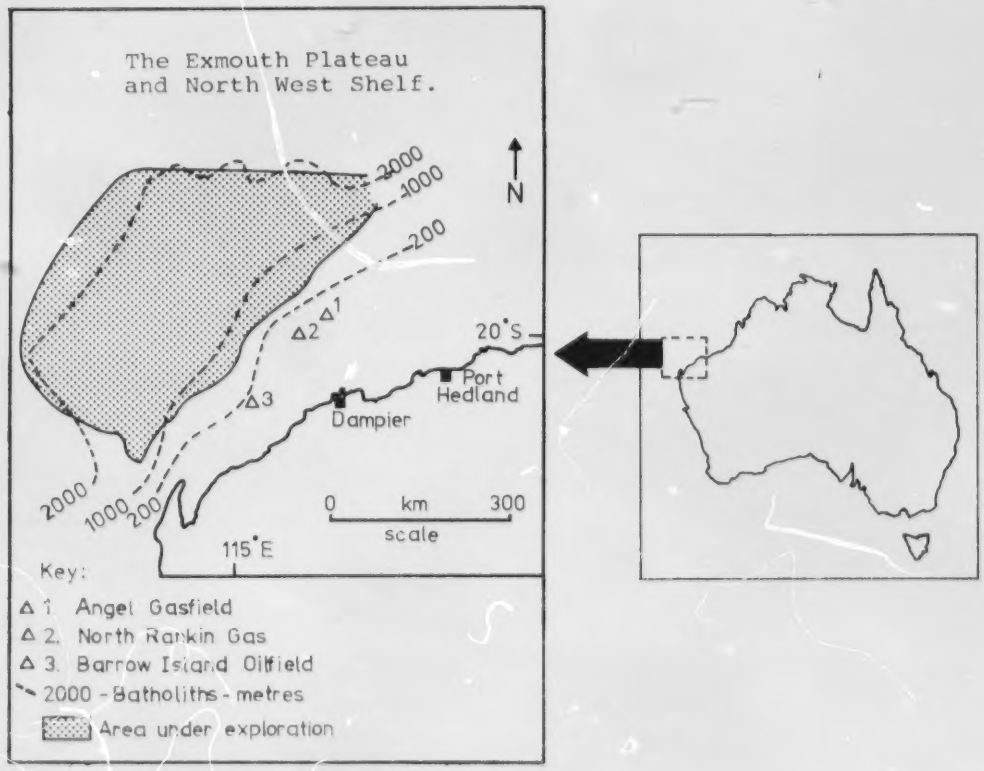
Oil is found in geological areas known as

1. rift valleys.
2. barrier reefs.
3. igneous intrusions.
4. sedimentary basins. S106

Questions to (S107 to S112) refer to the article and map below.

NORTH WEST SHELF DEVELOPMENT 1979.

Now it begins in earnest: a multi-billion dollar gamble that there is oil off the West Australian coast in sufficient quantities to keep the oil-rich Arabs at arm's length.
After a long delay, the Federal Government announced three steps designed to rekindle the explorer's zeal - the new oil-pricing policy will lift oil-prices towards world parity; the 30¢ in-the-dollar income tax rebate on risk capital; and control on overseas borrowings will be set aside for capital expenditures of more than $500 million.
The technology has been developed to exploit reserves in water up to 2km deep. This and the initiatives taken in Canberra, signal a resurgence of activity on the North-West shelf and the much deeper Exmouth Plateau. It is a race, no doubt of that. Thanks to Bass Strait, Australia is 70 percent self-sufficient in oil, but the proportion will begin to decline. Bass Strait, the major source of Australia's oil, produces about 400 000 barrels a day; but by the end of the century Australia might require up to two million barrels a day, instead of 600 000 as at present.
The North-West Shelf so far promises only natural gas.
The lure, apart from gas in economic quantities is oil, which is even more valuable. The lease areas of the Exmouth Plateau are 300km off the coast in ocean that was regarded until recently as beyond the reach of man. Then OPEC raised the price of oil by 400 percent. A $50 million feasibility study will determine whether it is worth spending a further $3000 million.



It is now possible to explore this area because of

1. new oil and gas traces discovered in the area.
2. Commonwealth and State government pressure.
3. incentives and improvements to oil exploration.
4. the availability of loans from overseas. S107

The distance from Barrow Island to Dampier is approximately

1. 100 metres.
2. 200 metres.
3. 100 kilometres.
4. 150 kilometres. S108

How far below sea-level is the majority of the area to be explored?

1. Under 200 metres.
2. 200 - 1000 metres.
3. 1000 - 2000 metres.
4. Over - 2000 metres. S109

The development of this potential oil and gas field is important to Australia because

1. we can earn revenue by selling oil overseas.
2. our local oil supplies are inadequate to meet demand.
3. our coal deposits are inadequate for our energy needs.
4. it will create many new jobs and towns in remote areas. S110

In 1979 Australia imported oil at a daily barrel rate of

1. 200 000.
2. 400 000.
3. 600 000.
4. 800 000. S111

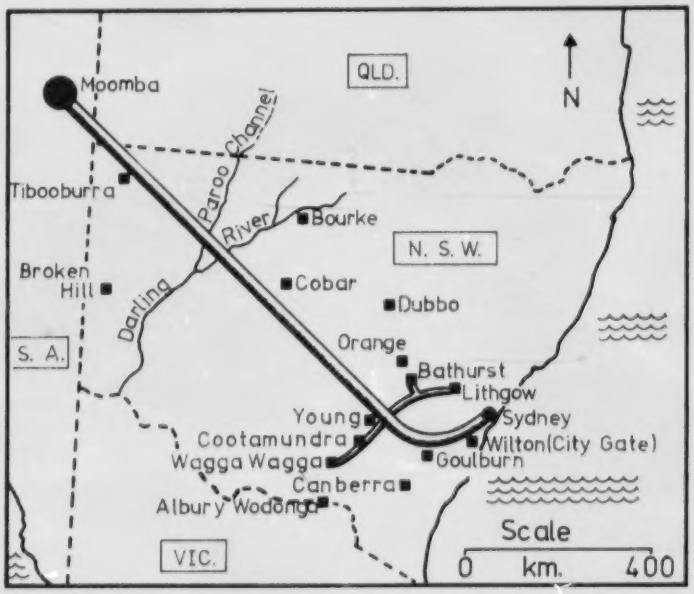
Why are the costs of developing the North-West Shelf likely to be as high as $3000 million?

1. Oil prices have recently increased and supply restricted.
2. It is located a great distance from Australia's markets.
3. The shelf is a long distance offshore and in deep water.
4. The Government has always refused to aid oil research. S112

Questions to (S113 to S118) refer to the information below

THE MOOMBA - SYDNEY PIPELINE

In the never ending search for fuel for transport, heating and energy, Sydney will receive natural gas through a long pipeline from the Moomba field.



1. Running NW/SE, the pipeline bisects New South Wales. Beginning at the Moomba gas field at the top end of South Australia, the route crosses two State borders, slicing a small triangle off the lower corner of Queensland before it enters NSW near the tri-State border. Not until it nears Coulburn does it begin a wide arc that swings it on to the outskirts of Sydney, where it will end at a metering station, the so-called "city-gate", at Wilton.

2. The contractors worked for the Pipeline Authority, an Australian Government instrumentality, which constructed the line and will operate it.

3. For some 150km, sand dune barriers up to 20m high straddled the route and each dune took a day to bulldoze through.

4. Welding teams of two or three top-class tradesmen worked over each join and then their work was verified by X-ray analysis. Behind the welders came the machines that coated the pipe. Again instruments perused the work to confirm whether the wrapping was up to specification. Only then was the pipe laid to rest and interred as more earth-moving equipment filled in the trenches.

5. Few are the signs that will remain to mark the pipeline route. Conservationists have had no cause to complain. In some areas farmers point to a bonus the project has brought them. Where the pipelayers struck rocky terrain, they needed soil in which to bed the pipe: they offered to sink dams on nearby farms in exchange for the earth they removed.

6. No doubt the boredom will figure prominently in the memories of many pipeliners. Some will remember the flies - and the insect repellant that was used by the drum. Others will remember the heat that rose on occasions at the northern end to 55°C in the sun - and the gigantic thirsts generated.

The area which will feed this pipeline is located in

1. New South Wales.
2. Queensland.
3. South Australia.
4. Victoria S113

The length of the pipeline from its source to its destination is

1. 800km's.
2. 1 300km's.
3. 2 000km's.
4. 3 000km's. S114

The pipeline was constructed for the

1. New South Wales Government.
2. Pipeline Authority.
3. Australian Gaslight Company.
4. South Australian Government. S115

Conservationists did not complain about the construction of the pipeline or the damage it might do to the natural environment because

1. they are not concerned with such issues.
2. the pipeline i above ground so it hardly disrupts the natural environment.
3. they knew the Government would force the construction to continue.
4. the pipeline is buried, and the area restored to its natural condition. S116

What would have been the main problems for the men working on the construction?

1. Long hours, low wages and long recreation leave.
2. Lack of food, heat, and sleeping in the open at night.
3. Sand dunes, floods and lack of communications.
4. Boredom and discomforts such as insects and heat. S117

In which portion of the pipeline would sand dunes have been a problem?

1. Young- Wilton.
2. Cobar - Orange.
3. Moomba - Tibooburra.
4. Wagga Wagga - Young. S118

Why might Australia be ideal for the production of Solar Energy?

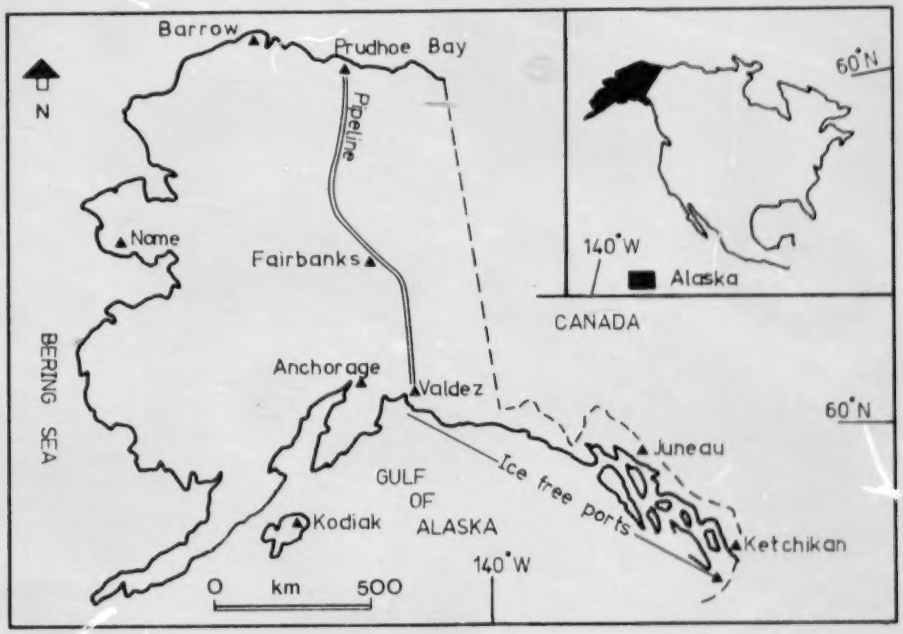
1. Australia is close to the equator and therefore experiences little cloud.
2. Australia has large areas which experience many hours of sunlight per year.
3. Australia is located close to the poles so the inclination of the sun helps to produce energy.
4. The high reflective index of deserts permits the storage of the suns energy. S119

What is Tidal Power Energy?

1. The use of the sun's rays to produce heat.
2. The production of electricity through nuclear fission.
3. The harnessing of the energy created by ocean movements.
4. Electricity produced by using the earth's natural heat. S120

Questions to (S121 to S127) refer to the map and passage below.

OIL FROM THE ARCTIC - THE TRANS ALASKA PIPELINE



OIL will at last begin to flow along the Trans Alaska pipeline today.

Behind that statement lie $US7700 million, nearly a decade of bitter legal and environmental wrangling, three years of work and the overcoming of some of the toughest engineering and technological problems ever faced by man.

Although the oil will start to flow from Prudhoe Bay on the north coast today at the rate of 300 000 barrels a day, it will not reach Valdez, on the Gulf of Alaska, for 30 days.

The pipeline is 1280km long and 19.2cm in diameter. When it is flowing the rate of flow will be increased in stages to 1.2 million barrels a day.

It will then be saving the U.S. more than $US17 million a day in oil imports - about 6300 million barrels a year on present prices.

Apart from industrial and environmental problems the pipeline's builders faced a fearfully inhospitable terrain. The north slope of the Brooks mountain range is 434km north of the Arctic circle, surrounded by an awesome landscape - flat, treeless, permanently frozen to a depth of 610 metres and extremes of temperatures. of 30^0C and minus 62^0C.

The top temperature is reached on only a few days of the short summer but the bottom temperature is low enough to make metal brittle enough to snap.

The top temperature is about the same as the heat of the oil in the pipe - which produced one of the major problems; the pipeline had to be elevated on pylons for nearly half its length so that the heat in the pipes would not thaw the frozen earth beneath it and cause catastrophic changes in ecological balances.

Also, the pipeline had to be built to allow for earthquakes in certain areas so that it could buckle up to 6.1m either sideways or upwards.

At last reports, the moose and caribou appeared unconcerned about the pipeline, but the same cannot be said about the conservationists. "How can they be so sure of untested technologies?" The Australian 20.3.77

This oil deposit and pipeline are being developed in

1. Canada.
2. the USSR.
3. the USA.
4. Iceland. S121

Why was it necessary to construct a pipeline from Prudhoe Bay to the Port of Valdez?

1. Valdez is near the large city of Anchorage.
2. Most of the oil is to be exported to Japan.
3. Electricity production for the U.S.A. is centred on Valdez.
4. Valdez is the nearest ice-free port to the oil deposit. S122

From the pipebuilders' point of view what was the most difficult aspect of the landscape?

1. Its flat treeless nature.
2. The annual range of temperature.
3. The great distances involved.
4. The diurnal range of temperature. S123

How did the pipebuilders prevent the high temperature of the oil from thawing the permafrost?

1. The oil was cooled before entering the pipeline.
2. The pipeline was elevated on pylons for nearly half its length.
3. The pipeline was buried deep beneath the surface.
4. The oil was moved through the pipeline only during summer. S124

Conservationists were concerned about the construction of the pipeline because of the

1. high costs involved.
2. engineering and technological problems involved.
3. possible damage to the Alaskan eco-system.
4. possible earthquakes. S125

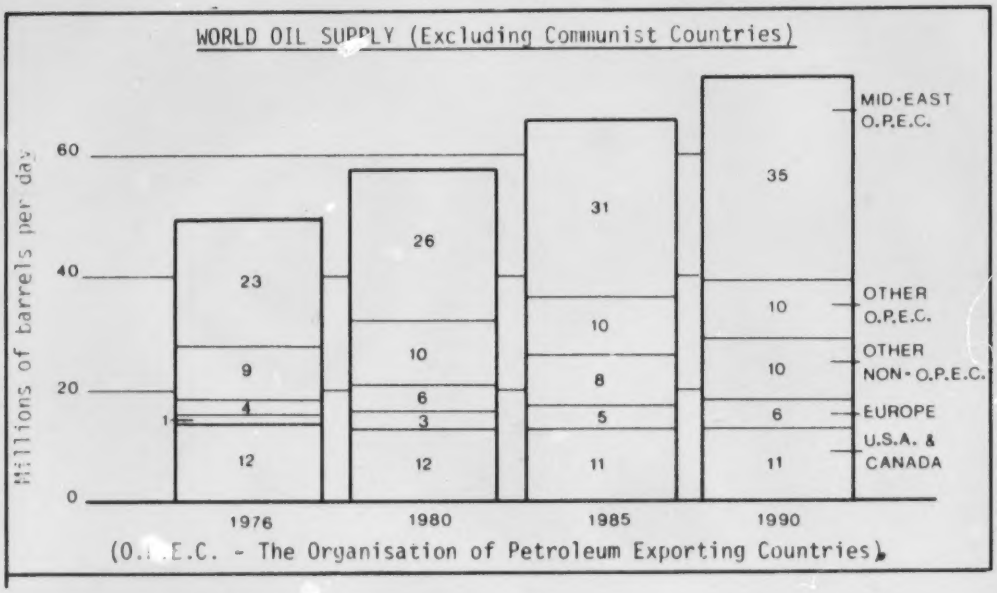
The largest range of temperature experienced during the building of the pipeline was

1. $30^{\circ}C$.
2. $32^{\circ}C$.
3. $62^{\circ}C$.
4. $92^{\circ}C$. S126

The awesome landscape through which the northern section of the pipeline crosses would be the

1. Taiga.
2. Savanna.
3. Tundra.
4. Rainforest. S127

Questions to (S128 to S131) refer to the graph below.



In 1976 O.P.E.C. production in millions of barrels per day was

1. 9.
2. 23.
3. 32.
4. 49. S128

By 1990 the largest producer of oil is likely to be the

1. Middle East O.P.E.C. countries.
2. other O.P.E.C. countries.
3. other non-O.P.E.C. countries.
4. U.S.A. and Canada. S129

The increase in world oil demand between 1976 and 1990 will be largely supplied by oil from the

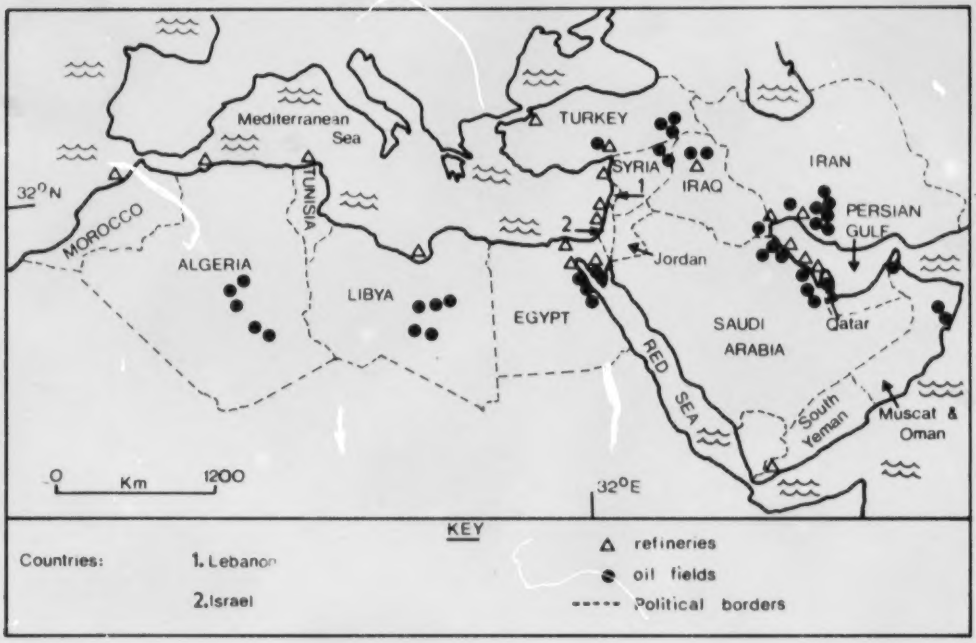
1. Middle East O.P.E.C. countries.
2. non-Middle East O.P.E.C. countries.
3. U.S.A. and Canada.
4. European countries. S130

By 1990 the oil producing area which is likely to have decreased production compared to 1976 is

1. Europe.
2. other O.P.E.C. countries.
3. other non-O.P.E.C. countries.
4. the U.S.A. and Canada. S131

Questions to (S132 to S139) refer to the information below.

OIL FIELDS AND REFINERIES OF THE MIDDLE EAST OPEC COUNTRIES



Since 1973 the Organisation of Petroleum Exporting Countries, or OPEC, has frequently been in the news. This organisation was born in 1960 from the initiative of Venezuela; it brought together the major oil producing and exporting countries from the Middle East, Africa, and South America. These countries, through OPEC, work for their common purpose of asserting control over their finite oil resources. Every oil consumer is painfully aware of their success in achieving this aim. With revenues of more than $100 billion a year, this international cartel has been the major economic influence in the post war period.

OIL IN THE MIDDLE EAST (1979).

Country	Oil Production Million barrels a day	Proven Reserves (Million barrels)	Population (millions)	Revenue $US Billion
Saudi Arabia	8.3	3009	7.8	36
Kuwait	2.1	799	1.1	9
Iran	5.2	1879	35.5	20
Iraq	2.6	857	12.2	10
Libya	2.0	723	2.8	8
United Arab Emirates	1.8	534	.8	8
Qatar	0.5	178	.1	2

The O.P.E.C. countries of the Middle East are located closest to

1. Europe.
2. Australia.
3. North America.
4. South America. S132

The O.P.E.C. member country which exports the greatest amount of oil is

1. Iran.
2. Iraq.
3. Kuwait.
4. Saudi Arabia. S133

The O.P.E.C. member country shown with the largest proven oil reserves is

1. Kuwait.
2. Iran.
3. Iraq.
4. Saudi Arabia. S134

O.P.E.C. is the organisation which represents

1. the major oil exporting countries of the world.
2. the countries ceiving supplies of oil from the Middle East.
3. only the major oil exporting nations in the Middle East.
4. all the oil producing countries of the world. S135

Member countries of O.P.E.C. include

1. Kuwait, Saudi Arabia and Venezuela.
2. Saudi Arabia, U.S.S.R., and Libya.
3. the U.S.A., Algeria and Tunisia.
4. the U.S.S.R., Kuwait and Israel. S136

Oil has been called 'king' in the Middle East because it is

1. the only export of the Middle East countries.
2. a natural resource with a limited supply.
3. a source of economic stability in the western world.
4. a resource which has economic influence on the western world. S137

O.P.E.C. is powerful because it

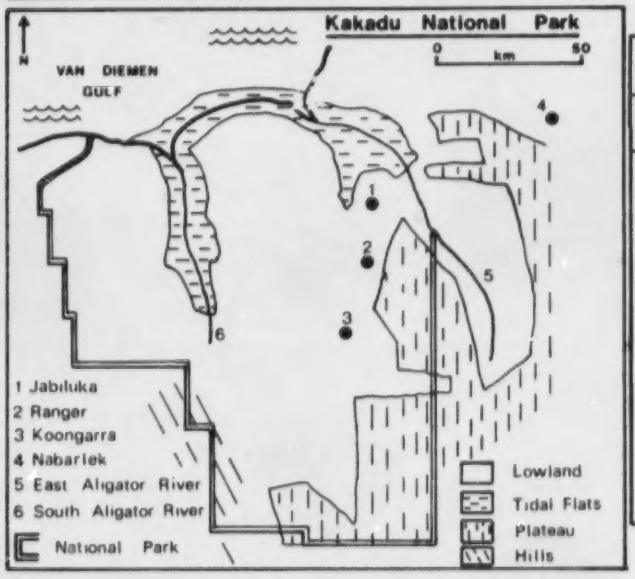
1. is frequently referred to in the newsmedia.
2. controls the distribution of most of the world's oil.
3. has many member countries which are major political powers.
4. controls the world's reserves of nuclear fuel. S138

Oil refineries in the Middle East are generally located

1. on the oil fields.
2. near port facilities.
3. near their major markets.
4. around the Mediterranean Sea. S139

Questions to (S140 to S151) refer to the maps and information below.

URANIUM DEPOSITS IN THE KAKADU NATIONAL PARK AND ARNHEM LAND RESERVE



MAJOR URANIUM DEPOSITS IN AUSTRALIA 1979.		
DEPOSITS	TONNES	ORE GRADE
RANGER (N.T.)	100 000	0.32
JABILUKA (N.T.)	208 000	0.39
NABARLEK (N.T.)	12 000	2.35
KOONGARRA (N.T.)	13 000	0.33
MARY KATHLEEN (QLD)	9 800	0.12
YEELIRRIE (W.A.)	46 000	0.15
BEVERLY (S.A.)	16 000	0.25
ROXBY DOWNS (S.A.)	N.A.	N.A.

Yellowcake is the usual form in which uranium is shipped from the mine processing plant. It is impure oxide, ($U_3 O_8$) brilliant yellow in colour and about 80% uranium by weight.

The most spectacular finds during the recent period of uranium exploration have been made in the East Aligator River area in the Northern Territory in Central South Australia and in Central Western Australia at Yeelirrie. The reserves and grade of the major Australian deposits are given in the table above.

These deposits indicate that, Australia has a significant supply of the world's proven low-cost uranium reserves.

The location of the Kakadu National Park is

1. north of the Equator.
2. north of the Tropic of Capricorn.
3. south of the Tropic of Capricorn.
4. north of the Tropic of Cancer. S140

The uranium deposits in the East Aligator River area are located on

1. lowlands.
2. tidal flats.
3. plateaux.
4. hill lands. S141

The area where uranium deposits are located in the Northern Territory would have a climate which would

1. be hot and dry all year.
2. be cool and wet all year.
3. receive most of its rainfall in winter.
4. receive most of its rainfall in summer. S142

The road distance in kilometres from the Ranger mine to Darwin is approximately

1. 220.
2. 250.
3. 280.
4. 300. S143

The largest deposit of uranium in Australia is at

1. Ranger.
2. Jabiluka.
3. Nabarlek.
4. Yeelirrie. S144

The highest grade uranium deposit in Australia is at

1. Ranger.
2. Jabiluka.
3. Nabarlek.
4. Yeelirrie. S145

Yellowcake is uranium oxide which is

1. pure.
2. unprocessed.
3. partly processed.
4. ready for use in reactors. S146

Yellowcake is a raw material used in the production of

1. hydro electricity.
2. nuclear electricity.
3. thermal electricity.
4. solar electricity. S147

Uranium is valuable to Australia

1. as a source of export income.
2. as a major force assisting decentralisation.
3. as an alternative to liquid fuel for transport.
4. for the production of our atomic energy. S148

Most people who oppose the production of energy by nuclear methods do so because

1. it is an inefficient method of generating electricity.
2. of the danger and risks to uranium miners.
3. of the uncertainty about the disposal of waste materials.
4. of the high costs involved in the use of reactors. S149

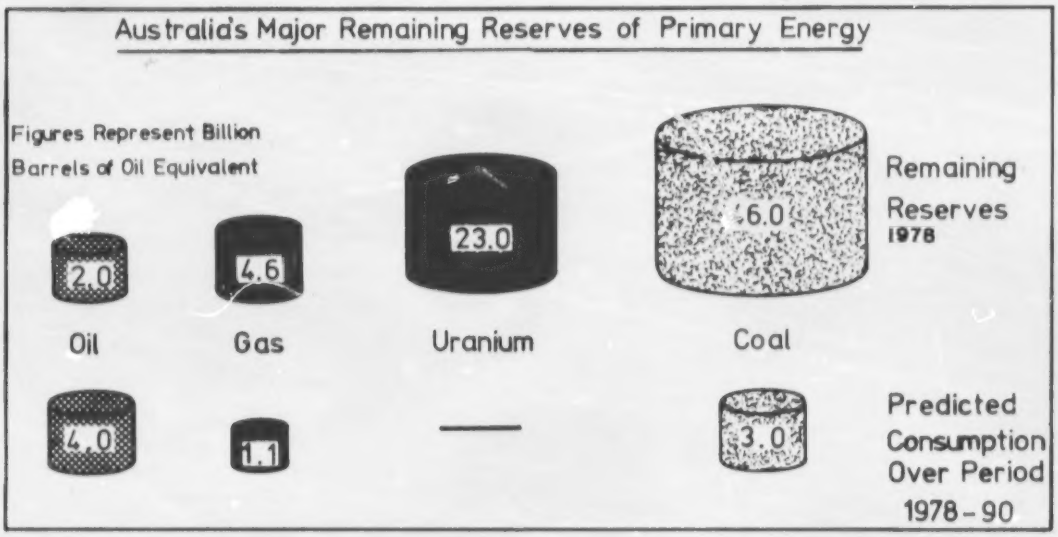
Australia is important to the worlds production of atomic energy because it

1. is the only source of the major raw material.
2. is a major source of nuclear technology.
3. imports a large proportion of the major raw material.
4. is a major source of the main raw material. S150

An early source of uranium for the nuclear industry in Australia was located at

1. El Sharana.
2. Pine Creek.
3. Adelaide River.
4. Rum Jungle. S151

Questions to (S152 to S157) refer to the diagram below.



The scarcest energy resource in Australia is

1. oil.
2. gas.
3. coal.
4. uranium. S152

Most of Australia's known energy reserves are in the form of

1. oil.
2. gas.
3. uranium.
4. coal. S153

By 1990 it is predicted that in terms of energy production

1. local supplies of oil will be significant.
2. more coal will have been used than oil.
3. uranium will replace oil as the prime energy source.
4. liquid fuel energy will rely on imported supplies. S154

The energy resources most capable of improving Australia's Balance of Trade would be

1. oil and gas.
2. gas and uranium.
3. coal and oil.
4. uranium and coal. S155

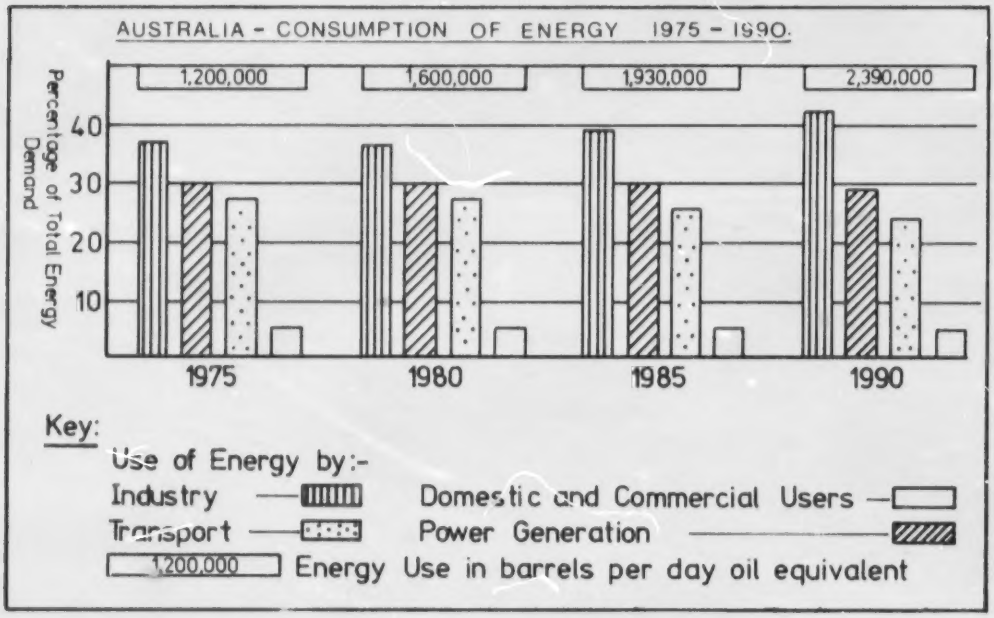
If the trend in coal consumption in the 12 years from 1978 to 1990 continues then how many years reserves of coal did Australia have left after 1978?

1. 84 years.
2. 184 years.
3. 204 years.
4. 304 years. S156

It can be said of Australia's energy resources that

1. uranium will be widely used in Australia by 1990.
2. natural gas is largest in reserve supply.
3. coal and uranium are in relatively short supply.
4. the scarcest resource is being consumed most rapidly. S157

Questions to (S158 to S162) refer to the graph below.



The largest consumer of Australian energy in 1975 was

1. industry.
2. transport.
3. power generation.
4. domestic and commercial users. S158

The sector which is likely to increase its share of total energy demand in the period from 1975 to 1990 is

1. industry.
2. transport.
3. domestic and commercial.
4. power generation. S159

Energy conservation and higher oil prices between 1975 and 1990 will have the greatest impact on the energy demand rate of the

1. transport industry.
2. primary and secondary industries.
3. electric power generation industry.
4. domestic and commercial sectors of the economy. S160

The pattern of Australia's energy demand between 1970 and 1990 is likely to be one which shows

1. an annual decrease in consumption.
2. an increase in demand for energy.
3. a decrease in demand by all sectors.
4. a uniform increase in demand by all sectors. S161

Between 1975 and 1980 the proportion of total energy demanded by industry decreased. Between 1975 and 1980 the industry sector

1. reduced its total use of energy.
2. increased its share of energy used.
3. remained a constant consumer of energy.
4. increased its total use of energy.

S162

Questions to (S163 to S169) refer to the article below.

AUSTRALIA'S ENERGY CRISIS

Australia, no less than the United States and Europe, faces a looming energy crisis. Its stark dimensions can be depicted by projections of crude oil consumption and domestic supply through to the 1980's. The demand curve points inexorably upward from present consumption of about 590 000 barrels a day to more than 800 000 a day by 1985. But the supply curve wilts from 1980 onward as output tapers off. From 416 000 barrels a day, Australian supply will be slashed to around 210 000 a day by 1985 if no new major oil discoveries are made.

The economic consequences of this widening gap will be a leap in Australia's crude oil import bill from $960 million to a massive $4 400 million by 1985 if prices inflate by no more than 5 percent a year. The need for urgent action to move the demand-supply curves closer together was brought sharply into focus this week with the BHP-Esso discovery of a further Bass Strait oil field after nine blank years of exploration and the expenditure of $100 million. The new Cobia discovery is part of an estimated 300 million to 400 million barrels contained in small pools throughout the Bass Strait area.

The Cobia and other fields can be brought into economic production if BHP-Esso can sell the output from them at the same price as imported crude - at present about $13.60 a barrel.* They will remain untapped if the producers can only recoup the $2.33 a barrel return which applies to oil from their existing wells. The recommendations made last week by the National Energy Advisory Council were mainly directed at lowering the demand curve. What is urgently needed is positive action to arrest the inevitable decline in the supply curve, and here the Federal Government has been acting too slowly.

Sydney Morning Herald. 19.5.77
** In September 1979 imported crude was over $20.00 per barrel.*

The supply graph for Australian crude oil would represent the

1. production levels of crude oil from domestic fields.
2. exports of domestic crude oil overseas.
3. supply of foreign crude oil to Australia.
4. level of production of the Bass Strait oil fields. S163

Australia faces an "energy crisis" the same as the U.S.A. and Europe because during the next 10 years

1. we should be self-sufficient in oil.
2. our demand for oil will exceed local production.
3. we will be unable to import coal to meet our needs.
4. imports of oil from the U.S. will be unavailable. S164

It is expected that in 1985, Australia's daily demand for crude oil will be approximately

1. 210 000 barrels.
2. 416 000 barrels.
3. 590 000 barrels.
4. 800 000 barrels. S165

In 1985 , Australia will need to import crude oil at a daily rate of approximately

1. 210 000 barrels.
2. 416 000 barrels.
3. 590 000 barrels.
4. 800 000 barrels.

S166

The impact on Australia of the need to import a greater proportion of its crude oil requirements after 1985 is likely to be

1. a reduced dependence on O.P.E.C. countries.
2. an adverse effect on the Balance of Trade.
3. a reduction in oil exploration in Australia.
4. an increase in the demand for liquid fuels.

S167

For Australia, the demand graph for crude oil would represent

1. only consumption of Australian crude oil.
2. only consumption of imported crude oil.
3. the domestic consumption of all crude oil.
4. the domestic consumption of O.P.E.C. crude oil.

S168

Why does the author of the article suggest that the price of crude oil should be raised from the existing $2.33 a barrel to parity with the world price?

1. To make small fields such as the Cobia a commercial proposition.
2. To raise the price of petrol for motorists in Australia.
3. To stop the inflation rate in Australia.
4. To reduce the exploration for new oil deposits in Australia.

S169

Questions to (S170 to S175) refer to the article below.

AUSTRALIA AND THE OIL SQUEEZE

In future centuries, historians exploring the Age of Oil will undoubtedly fix 1973-74 as a major landmark in their studies.

In the first half of 1973-74:

- Following resumption of Arab-Israeli hostilities, oil was, for the first time, effectively used on a world scale as a weapon in the conduct of war and foreign policy.
- Due to the concerted action of the major oil-exporting nations, oil prices soared - doubling and, in some markets, trebling over levels ruling at the beginning of 1973.
- Arab producing nations cut off supplies to some countries and significantly reduced supplies, in varying degrees, to others.
- The comforting assumption, that cheap oil would continue to be freely available to underpin the world's economic well-being, was shattered.
- Above all, the era of cheap and plentiful liquid energy, relative to other sources, finally ended - though hardly without warning.

Every oil buying nation in the world has been affected by these events and will continue to be into the foreseeable future.

What does this mean for Australia? What are the prospects in regard to price and availability of petroleum products in the short, medium and long term?

The immediate picture, broadly, is that once again Australia emerges as a lucky country in a troubled, uncertain world community.

Fortunately, severe product shortages, petrol rationing or other measures for appreciably curbing consumption are not in prospect.

Thanks to indigenous oil resources, Australia is for the time being partially, but not wholly, insulated from the chill winds of oil shortage. Seventy percent of refineries' stock is currently being supplied locally and from that 70 percent up to 90 percent of the nation's requirement for petrol, diesel distillate, aviation turbine kerosine and heating oil can be produced.

Protected from immediate shortages of supply, that area of the market currently is also affected only to a limited degree by rocketing world-wide price trends.

Not insulated against the outside world climate are products derived from the 30 percent of refinery stock which is imported.

These are mostly so-called "heavy end" products - bitumen, lubricating oil and fuel oil - for which a heavy crude oil stock, not available from Australian oilfields, is required.

(Petroleum Gazette, March 1974).

The events of 1973-74 which affected the oil importing nations were due to the oil pricing and distribution policies of the

1. ASEAN nations.
2. O.E.C.D. nations.
3. O.P.E.C. nations.
4. N.A.T.O. nations. S170

The years 1973-74 were most significant for oil importing nations because

1. the Arab-Israeli war commenced.
2. oil was no longer relatively cheap or plentiful.
3. they mark the beginning of the Age of Oil.
4. for the first time oil exporting nations raised prices. S171

In the oil crisis of 1973-74 Australia was regarded as a "lucky country" because it

1. used mainly coal for its energy requirements.
2. produced enough of its own oil to avoid rationing.
3. was able to continue to import all the oil it needed.
4. was largely dependent on overseas countries for its oil. S172

What percentage of its crude oil requirements did Australia provide from local oilfields during 1973-74?

1. 30%.
2. 70%
3. 90%
4. 100%. S173

Because it is not available from local fields, Australia must import approximately

1. 30% of its needs, mainly light crude used in producing petrol.
2. 30% of its needs, mainly heavy oil as used in bitumen.
3. 70% of its needs, mainly medium crude oil as used in lubricating oil.
4. 90% of its needs, for petroleum, diesel distillate and aviation turbine kerosene. S174

The type of oil extracted from the Bass Strait and other Australian oil fields is known as

1. petrol.
2. bitumen.
3. light crude.
4. heavy crude. S175

Questions to (S176 to S179) refer to the article below.

AUSTRALIA'S ENERGY PROSPECTS .

In the long term Australia's energy prospects look healthy, due to:

- Abundant coal resources.
- Substantial reserves of natural gas and uranium, both capable of being developed to serve local and/or overseas markets;
- Favourable geography for harnessing solar energy, together with the prospect that wealth and know-how will be available to adopt this and other new energy technology when it is developed.

In the short to mid term Australia faces problems and uncertainties due to lack of self-sufficiency in supplies of liquid fuel. In the short term at least, the present trend away from self-sufficiency will continue - if for no other reason than that it would take three to five years to bring into production any new oilfield that might be found.

The strategy for dealing with this situation involves diverse initiatives

- Boost oil search, especially offshore where the best prospects lie - and this itself implies providing the infrastructure for exploration to flourish.
- Encourage measures for using more efficiently the energy potential of every litre of liquid fuel, and for reducing waste.
- Press on urgently and vigorously with research and development in coal liquefaction, with the aim of reducing reliance on imported oil.
- Increase export earnings to help pay for mounting oil imports.

Looking again to the long term Australia should keep abreast of all developments for identifying and harnessing energy resources and for conserving the non-renewable ones.

Source: Petroleum Gazette.

Australia's answer to the energy crisis is to

1. rely on oil and uranium for energy.
2. import more petroleum and gas products.
3. use, but conserve, all available resources.
4. cease exporting oil and gas products. S176

In the short term our energy policies are primarily aimed at finding substitutes for

1. coal.
2. liquid fuels.
3. organic fuels.
4. liquified petroleum gas. S177

In the long term, Australia's energy prospects look healthy because

1. a wide variety of energy resources exist in Australia.
2. recent oil finds will make Australia self-sufficient.
3. the demand for liquid fuel is slowly decreasing.
4. in three to five years new oil fields will be producing. S178

In the long term, the renewable source of energy most appropriate for Australia would be

1. hydro energy.
2. solar energy.
3. energy derived from coal.
4. energy derived from uranium. S179

Questions to (S180 to S183) refer to the passage below.

AUSTRALIA AND ALTERNATIVE ENERGY

In the 1978-9 financial year the Australian Federal Government earned $1300 million in crude oil levy payments.

Against this, the Government allocated $15.3 million for 178 specific research and development grants aimed towards solving Australia's energy problems when its crude supplies run down. Of the $15.3 million, the biggest slices went to the Universities (34%) and the C.S.I.R.O. (25%) as these have the largest resources of manpower and technology.

When the funds for research from private organisations, the C.S.I.R.O., the Atomic Energy Commission and the Universities are included with the Government's allocation, the total commitment to energy research and development was about $40 million or $2.80 per head of population.

The funds allocated by the Government were:

34% to coal research
30% to synthetic fuels
12% to solar energy
10% to fossil fuel resource assessment
14% to a collection of other projects.

In 1978-9 the Federal Government's income from taxes on oil products was

1. $ 2.8 million.
2. $ 15.3 million
3. $ 40.0 million
4. $1300.0 million. S180

The total amount of research finance available from all Government and non-Government bodies in the 1978-9 Australian financial year was

1. $ 40 million.
2. $ 1 300 million.
3. $ 2 800 million.
4. $15 300 million. S181

The purpose of allocating funds to research alternative energy sources is to

1. reduce the consumption of coal.
2. reduce the dependence on crude oil.
3. increase the consumption of crude oil.
4. increase the revenue of the Government. S182

The largest share of government research funds was allocated to research into

1. nuclear energy.
2. fossil fuels.
3. solar energy.
4. synthetic fuels. S183

Questions to (S184 to S189) refer to the information below.

ENERGY IN THE U.S.A. - 1979

Petrol prices in the U.S. are rising at an annual rate of 55%.

In 1977 the U.S. oil imports were 8.5 million barrels a day. In 1978 they were 7.9 million and in 1979 they are expected to be 7.8 million. The decrease in U.S. imports has been brought about by the restriction in availability and has resulted in petrol queues, because the U.S. is unable to cover the reduction by local supplies of oil.

To overcome the problem the President proposed on July 15th that an Energy Security Corporation would be set up with $88 billion to invest in an effort to produce 2.5 million barrels a day worth of substitutes for imported oil. It will have the power to set up and operate its own energy plants.

The problem in the U.S. is not the shortage of energy - it is the price. The E.S.C. will be looking primarily to coal and shale oil to produce the 2.5 million barrels a day of substitutes by 1990.

Estimated coal reserves which can be mined in the U.S. total 400 billion tonnes - enough to meet American energy needs for an estimated 400 years. New plants will extract oil and gas from coal, at an estimated cost of between $27 and $45 a barrel, compared with the current OPEC price of $20.

There are even larger reserves of shale oil - between 400 and 700 billion barrels - that could be produced at a lower cost than the coal base ($25.35 per barrel) but its estimated daily output is only 400 000 barrels per day.

S.M.H. July 19, 1979.

The reduction in oil imports to the U.S.A. has been caused by

1. the increase in the local supplies of oil.
2. the decrease in the local demand for oil.
3. the decrease in the supply of foreign oil.
4. Government policy to improve the Balance of Trade. S184

The main energy alternatives to oil for the U.S.A. appear to be

1. fuels from plants and shale.
2. coal and shale oil.
3. oil and natural gas.
4. nuclear and solar energy. S185

By 1990, the U.S.A. aims to reduce its dependence on foreign oil by

1. 400 000 barrels per day.
2. 2.5 million barrels per day.
3. 4 million barrels per day.
4. 7.8 million barrels per day. S186

Between 1977 and 1979 the U.S.A.'s reliance on imported oil

1. increased.
2. decreased.
3. remained constant.
4. decreased at a constant rate. S187

The extraction of liquid fuel from coal has not been used widely in the past because

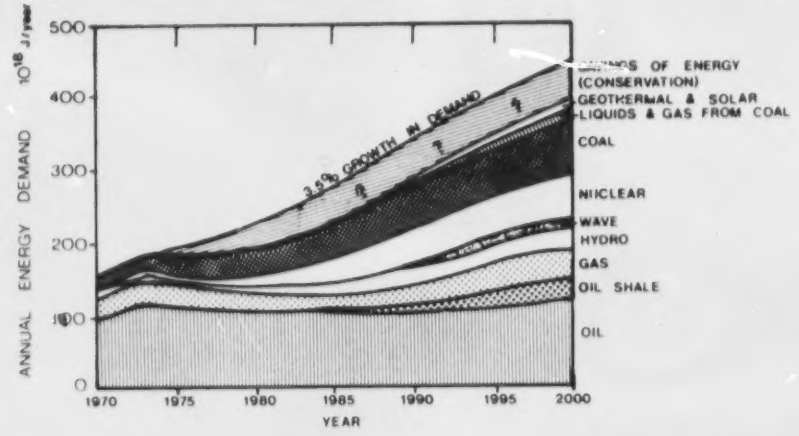
1. of the shortage of oil.
2. of the limited reserves of coal.
3. the technology was not available.
4. the costs of extraction were relatively high. S188

No matter which of the energy proposals Congress accepts, liquid fuel in the U.S.A. will for the remainder of the Twentieth Century be

1. unavailable.
2. more expensive.
3. less expensive.
4. replaced by alternative fuels. S189

Questions to (S190 to S194) refer to the information below

Probable world energy demand and fuel mix to the year 2000



This is a consensus of forecasts as to the energy mix to the year 2000, assuming that world economic growth is 3.5% per annum. The forecasts also assume that all countries put maximum effort into the development of 'alternative' energy sources.

Source: "What the World Run Out of Energy?" UK CrownAgents 1978

In 1970 the largest source of energy was

1. coal.
2. gas.
3. hydro-electricity.
4. oil.

S190

By the year 2000 the world's largest source of energy is expected to be

1. nuclear.
2. oil.
3. coal.
4. gas.

S191

The new energy sources which could contribute to maintaining supplies of liquid fuels to the end of the twentieth century are

1. geo-thermal and solar.
2. nuclear and hydro.
3. coal and oil shale.
4. gas and wave.

S192

The forecasts are based on an assumption that there will be a 3.5% per year increase in world

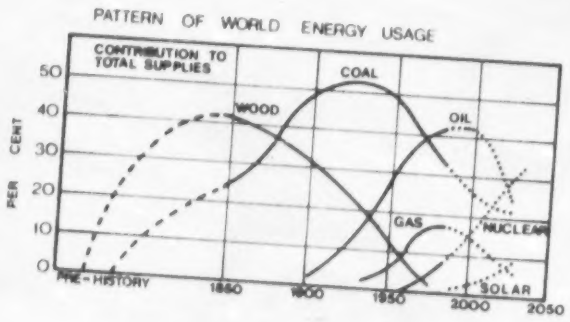
1. trade.
2. population.
3. energy prices.
4. per capita income.

S193

Which of the following combinations of fuels are all non-renewable fuels?

1. Coal, nuclear, solar and oil.
2. Coal, wave, hydro and oil.
3. Oil, gas, coal and nuclear.
4. Oil shale, hydro, nuclear and wave. S194

Questions to (S195 to S200) refer to the graph below.



In Australia in 1978, oil provided about 45% of our primary energy, coal provided about 42% and natural gas about 10%.

The sources of energy which are expected to increase their share of total power supply after the year 2000.

1. nuclear and gas.
2. coal and oil.
3. gas and solar.
4. solar and nuclear.

S195

Between 1900 and 1979 the greatest percentage change in the world's source of energy has been in

1. oil.
2. coal.
3. nuclear.
4. gas.

S196

By the year 2000 the largest single source of energy is expected to be

1. oil.
2. coal.
3. nuclear.
4. solar.

S197

In 1978, Australia's pattern of energy usage differed from that of the world pattern, in that Australia was relatively

1. more dependent on oil and coal.
2. less dependent on oil and coal.
3. more dependent on gas and oil.
4. less dependent on gas and coal.

S198

The source of energy which is expected to rapidly increase in importance in the twenty-first century is

1. oil.
2. nuclear.
3. solar.
4. coal.

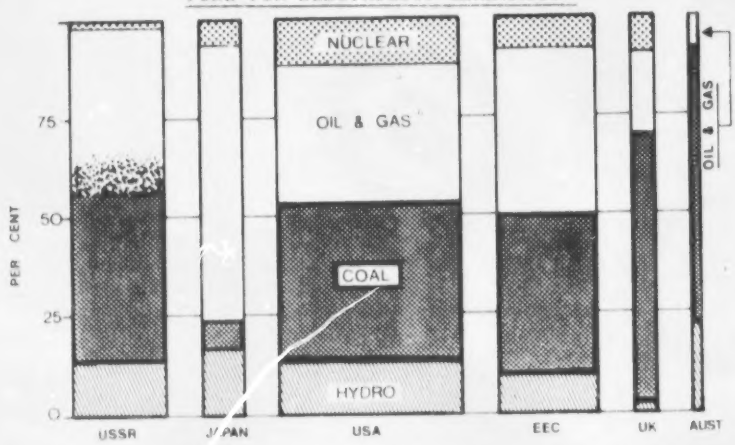
S199

Australia's export earnings would be most favourably affected by a world increase in the demand for

1. coal and nuclear power.
2. wood and coal.
3. oil and nuclear power.
4. gas and oil.

S200

Questions to (S201 to S206) refer to the graph below.



Basis: Power actually generated in latest years for which data are available. Width of each bar graph is indicative of actual amount of electricity generated. (in 10^9 K.W.H.)

Electricity in Australia is mainly produced using

1. coal.
2. nuclear fission.
3. petroleum products.
4. hydro-electricity schemes. S201

The country in which hydro-electricity supplies the lowest percentage of total electricity generated is

1. Australia.
2. the U.K.
3. the U.S.A.
4. the U.S.S.R. S202

Coal contributes the largest percentage of total electricity generated in

1. Australia.
2. Japan.
3. the U.K.
4. the U.S.A. S203

The country with the greatest demand for energy resources is

1. Japan.
2. the U.K.
3. the U.S.A.
4. the U.S.S.R. S204

The country likely to be most affected in its energy production by the pricing policies of O.P.E.C. is

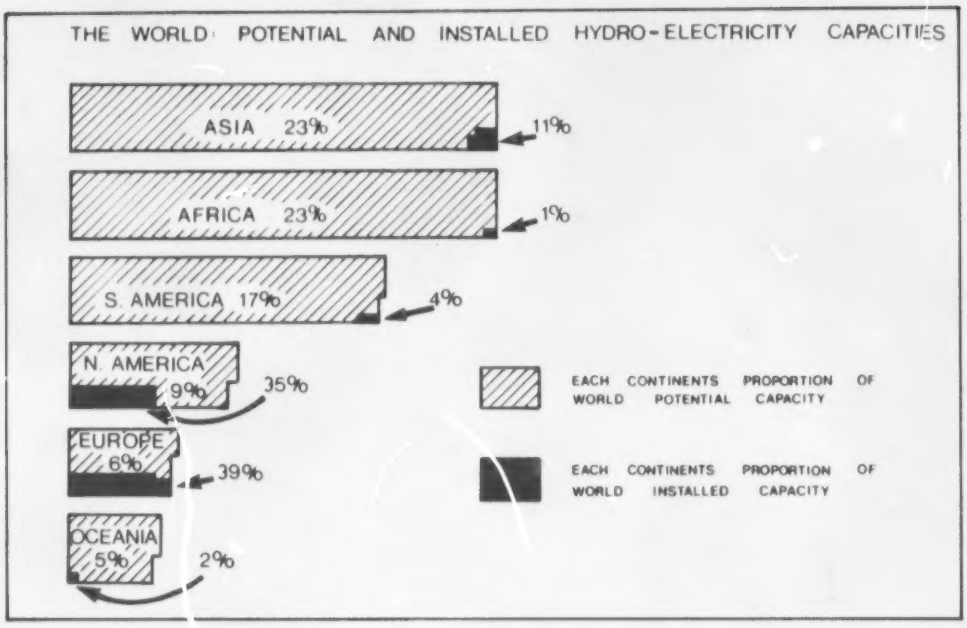
1. Australia.
2. Japan.
3. the U.K.
4. the U.S.A. S205

The country which exports but does not use uranium for power generation is

1. Australia.
2. Japan.
3. the U.K.
4. the U.S.S.R.

S206

Questions to (S207 to S211) refer to the graphs below.



The continent that has developed the smallest proportion of its hydro-electric potential is

1. Africa.
2. Asia.
3. Europe.
4. Oceania. S207

The continents which have the greatest potential to produce hydro-electricity are

1. Asia and Africa.
2. Oceania and Europe.
3. Europe and North America.
4. South America and Oceania. S208

The graphs suggest that the continents which are technologically most advanced are

1. Europe and North America.
2. Oceania and Europe.
3. South America and Oceania.
4. Asia and North America. S209

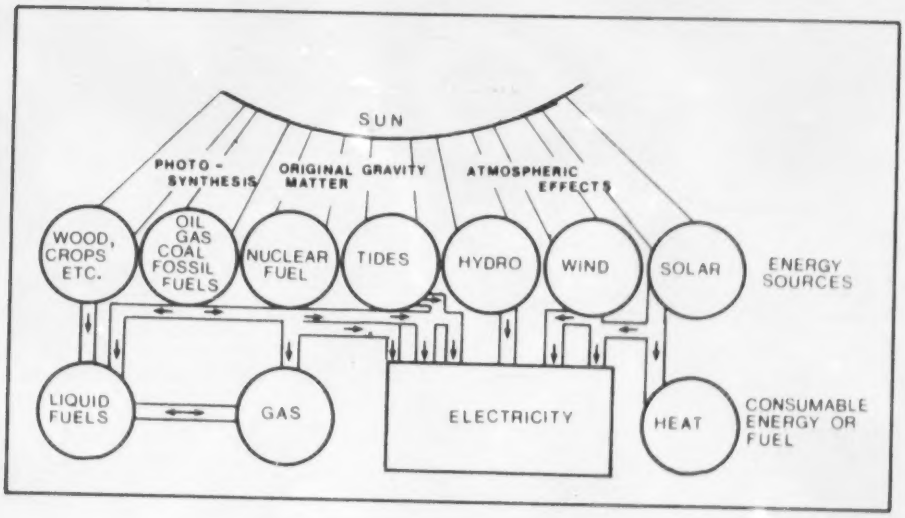
The cost structure for the generation of hydro-electricity for power has relatively

1. high initial costs and low recurring costs.
2. low initial costs and high recurring costs.
3. high initial costs and high recurring costs.
4. low initial costs and low recurring costs. S210

An advantage of energy produced by hydro schemes is that it

1. can be produced on any site.
2. is easily stored for future use.
3. uses resources which are renewable.
4. requires little technology to establish. S211

Questions to (S212 to S218) refer to the information below.



Primary Energy Source	USES			
	Transport	Domestic	Industry	Secondary Source
Brown Coal				✓
Steaming Coal				✓
Coking Coal			✓	
Natural Gas		✓	✓	✓
Oil	✓		✓	✓
Uranium				✓
Solar (a)		✓		✓
Hydro & tides (a)				✓

(a) = Renewable (i.e. replenished as used).

The atmospheric phenomena which can provide energy are

1. tides, water and wind.
2. solar, wind and water.
3. water, tides and nuclear fuel.
4. wood crops, fossil fuels and the sun.

S212

The ultimate source of all energy on the earth is

1. original matter.
2. gravity.
3. the sun.
4. photosynthesis.

S213

The only primary energy source not normally converted to a secondary energy source is

1. uranium.
2. natural gas.
3. coking coal.
4. steaming coal. S214

The renewable energy sources are

1. brown coal, steaming coal and coking coal.
2. solar, oil and natural gas.
3. solar, hydro and tides.
4. uranium, natural gas and solar. S215

Solar energy sources in Australia are mainly used to produce

1. gas.
2. electricity.
3. heat.
4. liquid fuel. S216

The energy generated by ocean movements can be used to produce usable energy in the form of

1. gas.
2. electricity.
3. heat.
4. liquid fuel. S217

Agricultural products, may in this century become an important source of energy for

1. transport.
2. electricity generation.
3. domestic heating.
4. the nuclear industry. S218

TOPIC S

MINERAL AND ENERGY RESOURCES.

Question No.	Answer
S 1	4
S 2	3
S 3	2
S 4	1
S 5	4
S 6	3
S 7	4
S 8	3
S 9	1
S10	2
S11	3
S12	2
S13	1
S14	2
S15	1
S16	1
S17	3
S18	3
S19	4
S20	2
S21	3
S22	1
S23	1
S24	3
S25	2
S26	1
S27	1
S28	1
S29	4
S30	2
S31	3
S32	2
S33	2
S34	3
S35	3
S36	3
S37	1

Question No.	Answer
S38	1
S39	1
S40	2
S41	2
S42	1
S43	1
S44	1
S45	4
S46	1
S47	3
S48	3
S49	2
S50	2
S51	3
S52	4
S53	1
S54	1
S55	4
S56	1
S57	1
S58	4
S59	1
S60	3
S61	3
S62	4
S63	4
S64	2
S65	2
S66	4
S67	2
S68	4
S69	3
S70	2
S71	4
S72	4
S73	2
S74	1

Question No.	Answer
S75	4
S76	3
S77	2
S78	3
S79	3
S80	4
S81	2
S82	3
S83	2
S84	3
S85	4
S86	4
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S100	4
S101	3
S102	2
S103	4
S104	4
S105	2
S106	4
S107	3
S108	4
S109	3
S110	2
S111	1

TOPIC S

MINERAL AND ENERGY RESOURCES.

Question No.	Answer
S112	3
S113	3
S114	2
S115	2
S116	4
S117	4
S118	3
S119	2
S120	3
S121	3
S122	4
S123	2
S124	2
S125	3
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S134	4
S135	1
S136	1
S137	4
S138	2
S139	2
S140	2
S141	1
S142	4
S143	2
S144	2
S145	3
S146	3
S147	2
S148	1

Question No.	Answer
S149	3
S150	4
S151	4
S152	1
S153	4
S154	4
S155	4
S156	2
S157	4
S158	1
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S171	2
S172	2
S173	2
S174	2
S175	3
S176	3
S177	2
S178	1
S179	2
S180	4
S181	1
S182	2
S183	2
S184	3
S185	2

Question No.	Answer
S186	2
S187	2
S188	4
S189	2
S190	4
S191	2
S192	3
S193	4
S194	3
S195	4
S196	1
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S198	1
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S210	1
S211	3
S212	2
S213	3
S214	3
S215	3
S216	3
S217	2
S218	1

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